

**AN EVALUATION OF THE PERCEPTIONS INFLUENCING CIVILIAN DEFENSE
CONTRACTOR'S PURSUIT OF HAZARDOUS DUTY ASSIGNMENTS**

by

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Abstract

Private sector civilian defense contractors are needed more than ever by government customers to provide countless services in dangerous locations such as Afghanistan and Iraq. Due to the negative ramifications suffered by all parties (providing organizations, government customers, and contractors themselves) when poorly chosen contractors are sent abroad to provide these services, assistance is needed to identify the best prospects to deploy. This quantitative study investigates contractor perceptions of the influences that contribute to their desire to pursue and accept (or not) assignments to dangerous environments. Through the use of an online survey, actual deployed or deployable contractors provide their responses regarding a number of influential factors. Results are analyzed along with foundational demographic trends to provide a glimpse of this unique workforce.

Dedication

This work is dedicated to my mother Elsie, who throughout my years has been the driving force pushing me to achieve the highlights of my life. Thanks Mom, for believing in me when I was wary of my own capabilities. Don't back down though because as you know—we have much more to accomplish.

Acknowledgments

I would like to recognize Dr. Janice Spangenburg for her steady mentorship during this study. I consider myself lucky to have had her, and my committee member's participation in this project. Thanks also to my lovely wife Terry, for her continuous patience and support as I struggled to complete this process. Lastly, I am very thankful for a lifetime of motivational support from my stepfather Dave.

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CHAPTER 1. INTRODUCTION

Introduction to the Problem

Civilian augmentation to the uniformed armed services of the United States in time of war has a long history (Blizzard & Kwolek, 2004; Moten, 2010). Understanding this relationship between the private and public sector is especially important today considering the increased worldwide deployment of the U.S. military abroad. The current conflicts in Afghanistan and Iraq provide excellent examples in that there are possibly an equal number or more civilian contract employees deployed as uniformed armed forces members (Ellington, 2011; Jenks, 2010; Moten, 2010; Spearin, 2007). Cohn (2008) stated: “U.S. private federal contractors now total more than 7.5 million, which is four times greater than the federal workforce itself” (p. 47). This situation highlights a need to understand the underlying motivations for private contractors to deploy to hazardous environments. Placing poorly vetted individuals in harm’s way can be costly for not only the private firms that are supplying these contractors but also the government customers who are ultimately paying for their employment.

Selecting and recruiting ideal individuals to fill these positions can be a daunting task (Few, 2008). Potential hires may have the requisite educational, skill, and technical qualifications for required openings, but their personal backgrounds and motivations are often key when successfully operating in hazardous environments. The prospect of being selected for duty in dangerous areas, and the often associated elevated salaries and excitement is often very enticing to many. This researcher has had the responsibility of

filling many of these unique positions and has encountered the many obstacles distinct to this industry. For example, some prospective applicants misrepresent their skill sets, motivations, and ability to operate for extended periods in such stressful environments in order to acquire employment in these positions. Understanding what underlying perceptions come into play when private sector candidates consider hazardous duty work may provide recruiters for this line of work assistance in hiring individuals suited for these unique assignments.

The aim of this study is to understand the impact of the several motivations found responsible for seeking these positions located in dangerous surroundings. One possibility for the very limited previous research found regarding this type of employment may be the often held opinion that the increased financial compensation is the overwhelming incentive for these jobs. Such preconceptions will be looked at during this study, as actual defense contractors from several organizations are queried as to why they choose to deploy to dangerous areas. Their responses will provide insight into their motivations. Only one study (Few, 2008) has been located during this project concerning civilian aspirations to deploy to dangerous environments. This earlier work, however, specifically examined government civilians of a single Navy organization. Admitting that the motivational factors identified for government civilians may be different than motivational factors for employees from private and non-government organizations, Few (2008) recommended that private sector contractors also be investigated. Few (2008) specified that “research is needed to identify the motivational factors for employees from private and non-profit corporations who seek employment in high-risk environments” (p.

144). Accordingly, this study examined precisely such private sector civilians, and sought to provide a beginning to the potential understanding of what drives these specific individuals and their desire to go into harm's way.

Background of the Study

The use of private contractors in support of U.S. national interests overseas is not a new enterprise. The utilization of private contractors to augment U.S. military personnel deployed in dangerous locations, for example, dates back to George Washington's utilization of such personnel during the Revolutionary War (Blizzard & Kwolek, 2004). The use of these assets is and has been important for the government for several reasons. Principal among these is providing a means to employ proficient individuals in rapidly developing lines of work such as technology and science (Kalleberg, 2000; Spearin, 2007). Moten (2010) adds that currently "private contractors have assumed responsibilities that were previously considered inherently military, such as providing logistical support and protecting installations and high-ranking officials" (p. 7). Ellington (2011) adds that replacing uniformed members with private contractors limits "the size of the military footprint and at the same time frees up more military personnel for combat roles" (p. 143). Government in general is bureaucratic, and in and by itself does not fare well keeping up in quickly changing fields. Contracting private assets provides the government an ideal way to keep abreast of the latest advancements in technology and skilled personnel.

Identifying individuals apt to successfully accomplish this important work is valuable not only for the private sector organizations providing such services, but also for government customers. This dilemma of finding those inclined to do well is not unique to defense contracting, or for contracting in general. Hiring the wrong personnel can be costly in all industries. Such mistakes additionally can overburden other employees and human resources staff, lower morale, and also include inefficiencies associated with departing and replacement workers (O'Connell & Mei-Chuan, 2007). Employing and deploying the wrong personnel is a waste of organizational assets, and can delay government goals. Whereas employing an inappropriate individual can be a common problem throughout any labor force, the hiring of an unsuitable defense contractor can have life or death consequences for the contractors themselves, and the personnel they support.

High employee turnover in the defense contracting industry, as well as most lines of work is often attributed to a failure identifying the correct individuals during the hiring process. Deployed contractors in dangerous environments often need to feel committed to their organizations and the ultimate cause of the forces they support. According to Bentein, Vandenberg, Vandenberghe, and Stinglhamber (2005), it has been proposed that such a need for commitment is a “particularly powerful predictor in the turnover process because of its presumed sensitivity to the characteristics of the work environment” (p. 468). This state of affairs is complicated when attempting to identify candidates to operate for prolonged periods of time in hostile environments because there are many additional factors in addition to a candidate’s technical qualifications. There currently

exists a gap in the knowledge base as to why private sector individuals choose to seek out work in dangerous surroundings. An understanding of why applicants try to find such work may be extremely helpful in identifying the correct individuals, with the right commitment for these unique positions.

Several well-known theories including motivation theories from Maslow (1943) and Herzberg (1959), and McClelland's (1967) work on increased compensation and how it affects employee performance are to be reexamined during this investigation in relation to this specific dilemma. While it is often presumed that the increase in monetary compensation normally encountered while operating in dangerous environments is the only factor responsible for attracting civilian participation abroad, additional motivations will be sought. Importantly, in addition to the foundational works reviewed, more contemporary theories are assessed to help shed light on why candidates seek such unique employment abroad.

Statement of the Problem

Current and future world events are stretching the ability to use uniformed members of the U.S. Armed Forces to protect American interests overseas. More than ever, the concurrent use of civilian contractors to augment the military overseas is essential. Trends indicate that the need to employ private sector forces in hazardous environments will continue to grow. According to Jackson (2009), "businesses no longer simply manufacture the products of war; they also provide the warriors, representing a large shift from products-based to services-based government contracts" (p. 212). Given

this necessity, it is very important to employ and deploy the individuals most suitable for this profession. The contributing factors that entice civilians to volunteer to put themselves in harm's way are hard to pin down. While many believe that the high level of compensation is the only attraction, several additional motivations become apparent when deployment incentives are investigated.

For a variety of reasons, some individuals who are sent abroad to represent their organization and ultimately their governments fail to succeed in their assignments. These failures frequently result in the contractors being let go or assigned to yet another program seemingly more suitable. Quite often contractors are lured away by competitors or simply quit when they are discomforted by surprisingly spartan conditions. The cost for this frequent turnover is almost totally paid by the hiring firm (Scoppa, 2003). This turnover ultimately could be prevented by identifying candidates more apt to succeed in the first place. High attrition is common in this industry and is often considered the norm vs. something extraordinary. According to Borton (2007), "it is often observed that, in a high turnover environment, the management team feels somewhat powerless to confront and solve the high employee turnover. So it becomes accepted as a 'de facto' state" (p. 31). The self-perpetuating routine of hiring and then often needing to find replacements is good for candidates, but frequently resource-challenging for organizations.

Little previous research has been located about this particular problem in defense contracting. Knowing in advance what inspires private individuals to seek assignments in hazardous environments could assist hiring authorities locate candidates more likely to succeed when sent abroad. Such an understanding of motivational reasons may result in

companies hiring employees motivated to support organizational requirements in a location and enhancing continuity in high-risk locations, which could increase in effectiveness and overall production (Few, 2008, p. 142). Until such an understanding is forthcoming, the unconstrained practice of quickly hiring deployment-seeking contractors, almost regardless of their motivations, will presumably continue.

Purpose of the Study

The purpose of this study is to investigate and identify the perceptions of individuals in the defense contracting industry as to which considerations are important when deciding whether or not to pursue and accept an assignment in a hostile environment such as Afghanistan and Iraq. Understanding which factors are related to accepting or declining such assignments could be of great use to both public and private sector organizations concerned with recruiting civilians to deploy to dangerous environments. The goal of this study concerns not only what factors influence those seeking dangerous deployments, but importantly the amount of influence each factor has. It is hoped that turnover may be lowered by understanding what motivates private sector contractors to desire hazardous duty assignments. Although this research focuses on a specific industry, the quest to lower turnover by identifying its causes is universal. Griffith, Hom, and Gaertner (2000) point out findings that suggest individuals with high turnover propensities can be identified prior to organizational entry. Appreciating which motivations affect individuals may help recruiters properly align candidates into

categories which have been deemed successful or unsuccessful for certain types of work like hostile fire deployments.

A natural benefit from this research may be the lessening of resource-sapping turnover which plagues this industry. Although job skills are relatively easy to ascertain, job fit for a hostile environment deployment can be more elusive. O'Connell and Mei-Chuan (2007) explain that generally “assessing candidates for job fit and skill fit is your best defense against costly turnover and the best way to build a staff of capable, motivated people” (p. 19). Not understanding candidate ambitions can lead to expensive selection process failure (Koch, 2006). Although dangerous duty locations and conditions are unique, certain administrative generalizations such as turnover expenses transcend all lines of work.

Further research possibilities in this line of inquiry may include compiling data detailing which attributes lead to successful fulfillment of defense contractor tours in hostile areas, and conversely which point to problems. Although ample research has been done on job fit attributes (Roberson, Collins & Oreg, 2005; Pool & Pool, 2007), this study could be the first of several defense contracting industry specific investigations that look into what employees perceive as important in choosing this type of work. The potential creation of a tool for predicting which applicants stand a better chance for successful employment in this industry may also eventually be possible.

Rationale

The utilization of private sector contractors by the U.S. Government has recently been at an all time high, and this condition shows no sign of decreasing (Jenks, 2010). This high dependence, coupled with an existing lack of previous specific research on private sector contracting, gives good reason for a study on these employees and the influences on why they choose to deploy to dangerous areas. There currently is no structured research regarding what is and what is not important to private sector individuals seeking employment in arduous environments. This study provides insight into the motivations of these specialists, and serves as a foundation for future investigations—be they industry specific or as a generic example of group inspirations.

The current state of employee turnover in this line of work is extremely high (Few, 2008). Although not unique to this industry, increased scrutinizing by organizations during the hiring process can often lessen costly turnover. According to Cherne (2004), “the real cost to a company from the turnover of an employee is the equivalent of one year of pay” (p. 11). More than the financial costs, additional losses resulting from turnover may be even dearer. The extent of such losses may never be known since the some commodities like customer service expertise are not captured in metrics (Holtom, Mitchell, Lee, & Eberly, 2008).

In addition to the common turnover downfalls experienced by all lines of work, having to replace forward-placed contractors and the like adds additional negative consequences. Locating, enlisting, and positioning these often technical workers is costly for all involved. Reducing the price of turnover would not only benefit contracting

organizations, but also their important customers. This research will add to the limited data that currently exists about this profession and may help in placing the right individuals in the very dangerous environments they seek. A continued lack of knowledge regarding this distinct occupation will help perpetuate the wasteful and dangerous mistaken assignment of the wrong people to these perilous locations.

Research Questions

This study seeks to explore the reasons why civilian defense contractors actively seek out deployments to dangerous locations around the world. A common misperception is that increased compensation for such employment is the only reason for volunteering for this type of duty. An earlier elementary investigation on this topic by this researcher indicated that there were numerous reasons individuals chose this type work. This study is an expansion of this earlier academic inquiry by this researcher, and seeks to specifically look into what factors influence civilian defense contractors to pursue and accept assignments for service in dangerous environments.

The research questions for this investigation sought to identify which considerations are most influential to the majority of those seeking positions as defense contractors deployed in hostile environments. Considering the prevailing perception that increased financial compensation is solely responsible for desiring such work, several questions are addressed in this study. These questions are listed below:

1. Is the increased financial compensation the only or main motivator for civilian defense contractors to seek positions located in hostile environments?

2. How do the factors of increased experience, family considerations, or concern about danger influence civilian defense contractors when pondering deployment to dangerous areas?
3. How influential are each of the considerations for civilian defense contractors when deployed in dangerous locations?

Additionally, if a common set of influences can be qualified as important to these deployment choices, the extent of their influence was sought. How these factors ultimately affect the commitment Bentein et al. (2005) refer to as being influential on turnover was also sought. A lack of commitment can render employees susceptible to the labor poachers often present in this line of work. Although an exact tool for defense contracting recruiters to use when searching for candidates for these assignments is beyond the scope of this study, its need is well recognized. Few (2008) points out that:

Research is needed to create an effective recruiting model that could help deployment-centric organizations identify potential employees who are motivated by patriotism and sense of duty, as well as a desire to use their skills and abilities, obtain new life experiences, and make a difference in the world. (pp. 144-145)

It is hoped that this investigation can serve as the foundation for future inquiries on this topic, and ultimately the creation of such a recruitment tool.

This project attempts to aid this industry's managers when faced with frequent and untimely turnover. This is confronted through a survey targeted at actual deployed defense contractors. This instrument's central variable is the desire to attain and maintain such hazardous duty deployments. This wish was measured against the factors of

monetary influence, family considerations, deployment affect on career advancement, and concerns about danger when deployed in hostile locations.

Significance of the Study

The existing body of knowledge regarding defense contractor turnover is thin, but the employment of such workers has grown. Although the negatives of frequent turnover are well-known for general lines of work, they are especially agonizing for defense contracting. In addition to the normal time and commitment of resources required to replace incorrectly chosen employees, defense contracting organizations face additional burdens that make turnover even more painful. Additional employee requirements such as difficult-to-acquire security clearances must also be held by replacement candidates. The supported military organizations also frequently add additional time consuming requirements such as common training (first- aid, anti-terrorism classes, etc.) that all deploying personnel must have. Lastly, most contractors must attend a week-long pre-deployment course that takes at least two months to schedule attendance. The combination of all these circumstances usually equates to a two to three month gap between the time a misplaced contractor departs an assignment, and when his or her replacement finally begins satisfying their duties.

This study, then, represents an effort to lessen the impact of turnover in this line of work by decreasing the possibility of it occurring. Placement of the correct individuals will be of great help to contracting organizations, and enable them to provide more efficient services to fill an ever-increasing need by their government customers. These

clients are enjoying having the “capability to purchase as needed, rather than being forced to predict in advance” services from private sector providers (Baldwin, Ausink, Campbell, Drew, & Roll, 2009, p. 113). The ability to lessen costly contractor turn-over may be achieved if recruiters and program leadership in the contracting industry better understand why aspirants desire to deploy to such dangerous settings. Often held notions such as “it’s all about the money” will inherently be confronted by this research. Situations such as this are expected and necessary when original explorations are conducted.

Definition of Terms

Most terms encountered in this study are frequently used across all industries. There are some intricacies however in the defense contracting industry and an effort is required to specify these distinctiveness’s:

Contingent Labor refers to a wide-range of short-term employment arrangements such as contracting, outsourcing, self-employment, temporary employment, and home-based workers (Kunda, Barley, & Evans, 2002).

Defense Contracting is an agreement between the government and private organizations to provide goods and/or services to the government. This service frees the government from having to make the products or conduct functions itself.

Dependent Contractor refers to contractors that are employed by small to large contracting organizations, vs. independent types who are more correctly labeled independents (VandelHeuvel & Wooden, 1997).

Employee Turnover can over all be defined as the rate of change in the working staff of an organization during a defined period (Shahnawaz & Jafri, 2009). In this study this turnover refers to the need to replace an unpredicted departure of a deployed defense contractor.

Independent Contractors are self-employed workers vs. dependent contractors who are as a rule part a larger contracting firm (VandelHeuvel & Wooden, 1997).

Job Satisfaction refers to an employee's evaluative, emotional, and behavioral responses to their job (Locke, 1976).

Labor Poaching refers to the organizational practice of enticing employees of rival firms to leave their current jobs by offering them inflated compensation. This practice is often used by defense contracting firms in order to attain key personnel. Alsleben (2005) importantly points out that this practice also saves the poaching firm the training costs often associated with highly trained personnel. This is true too as well for employees willing to place themselves in harm's way during dangerous assignments.

Organizational Commitment is described by Robbins and Coulter (1999) as how an employee feels attached to a firm due to their loyalty and how they identify and are involved with it.

Propensity to Leave refers to an employee's desire or willingness to leave their organization (Fried, Shirom, Gilboa, & Cooper, 2008).

Role Stress is defined as the pressure an employee is under due to a combination of not knowing exactly what is expected of him/her, and additional strains caused by conflicting priorities (Fried et al., 2008).

Turnover Intention is an employee's conscious and deliberate determination to voluntarily depart an organization (Tett & Meyer, 1993).

Withdraw Cognition describes a workers inclination to think about voluntarily leaving a position, and the possible positive and negative consequences (Tett & Meyer, 1993).

Assumptions and Limitations

Assumptions

It is assumed that defense contracting professionals are very much different than the majority of contactors in the overall workforce. Individuals in this industry, especially those who seek hostile environment deployment, are extremely well compensated. Many of their responses to survey questions could be tainted by the fear of possibly losing their high-paying positions.

Another assumption is that the sample respondents will answer survey questions honestly and objectively. High-paying positions such as deployed contractors are desirable by many, and participants could subjectively provide answers they assume are politically correct. An additional assumption is that the sample participants adequately represent all defense contractors. The wide-ranging defense contracting programs represented in this study should provide a sufficient representation of this particular industry.

It is assumed that throughout this study the researcher-scholar/practitioner set aside his subjective view of this industry and those who choose to work in it. Impartial

checks were performed throughout the investigation by both academic oversight and also professionals from the contracting industry. Research was conducted in a controlled manner so that results will be realistic. It is also assumed that research safety precautions performed will be successful. Procedures assuring data security, confidentiality, and privacy will be conducted throughout study. These procedures, as well as measures to assure research is conducted in an ethical manner are detailed in the study's Methodology section.

Limitations

This study is limited by many factors. Major among these constraints is the limited number of contactors included in the study and the narrow number of programs and firms included. Defense contacting is a very broad industry ranging from designing and producing military aircraft to providing intelligence services overseas. Due to resource constraints this investigation was limited to a restricted number of contractors from a small amount of organizations with deployees in hostile environments. Conclusions should be attributed as such, although this study may serve as a base for expanded project/program-specific research.

Another inherent limitation with an online survey regarding items such as compensation concerns is the high possibility that some respondents will resist fully honest responses due to concern over their job security. The high compensation amounts involved in defense contracting often makes open discussion about money very sensitive, and participants may not feel comfortable responding candidly. A further hindrance to sincere responses may be feelings of guilt. The current international conflicts in which

contractors are supporting have claimed thousands of U.S. uniformed service member's lives, and respondents may feel guilty admitting the influence that money has for volunteering to deploy.

Nature of the Study

All varieties of major mainstream research methodologies (quantitative, qualitative, a mix of the two) have potential utility in original research. While the use of existing surveys would have been preferable, this researcher located no suitable preexisting data on this exact subject. This being an initial inquiry favors a choice of one method to put down a foundation on which to build. Access to other defense contractors, either in person or electronically, has led this researcher to choose a quantitative approach and a straightforward instrument to gauge the importance of certain factors on their choice to pursue dangerous assignments.

A study of what influences a defense contractor's decision to pursue a hazardous duty assignment is inherently biased. Although some individuals may have very personal and unique reasons to pursue such assignments, this study examines some common factors. Motivation, for example, drives individuals to make certain choices including the type of employment they seek. Motivational theory and the study of employee stimulus has been the subject of interest to both researchers and organizations for a very long time (Adams, 1965; Deci, 1976; DeRosa, 2009; Elding, Tobias, & Walker, 2006; Herzberg, 1958; Maslow, 1943; Maslow, 1959; Oleson, 2004; Pate, 1978; Pendegast, 2008). This factor's connection with dangerous duty choice is essential.

Another basic consideration affecting such a choice is an employee's current and future job satisfaction. Here too, is a factor that has received abundant prior attention (Bailyn, 1991; Bass, 1985; Bass & Avolio, 1994; De Cuyper, Notelaers, & De Witte, 2009; Gomez-Mejia, Balkin, & Milkovich, 1990; Katz, 1960; Locke, 1990; Maidani, 1991; Tamosatis & Schwenker, 2002). Although outside the scope of this study, the relationship of job satisfaction and resultant employee turnover choices is important, and is considered in this investigation. Additional potential causes will also be investigated.

The affect of employee compensation has also been well researched over the years (Adams, 1965; Bailyn, 1991; Green & Heywood, 2008; Honig-Haftel & Martin, 1993; McClelland, 1967; Mitchell & Mickel, 1999; Osterman, 1982; Reif, 1975; Tavis, Feij, & Capel, 2006). This factor's influence on employee satisfaction and resultant effect on job selection and retention is significant. This study considers all these factors and their combined effect on a defense contractor's pursuit of an assignment in a hazardous duty environment.

A graphical depiction of the relationship between these factors is seen in Figure 1.

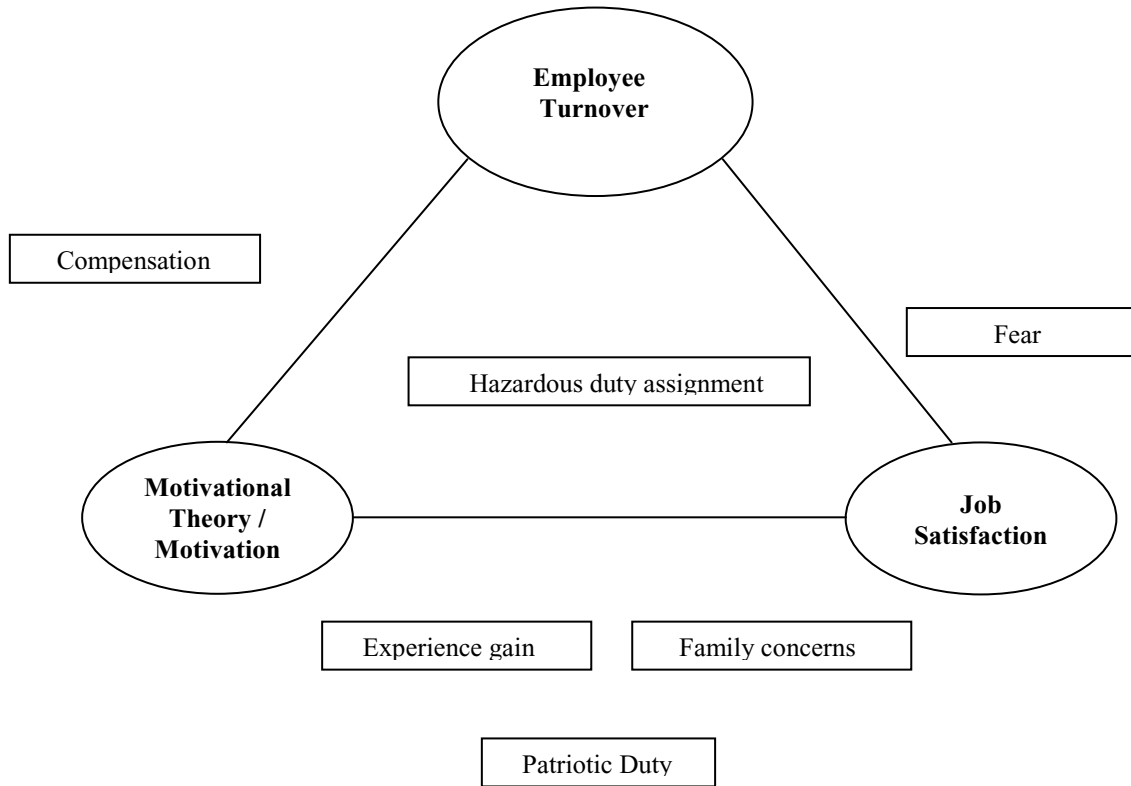


Figure 1. Conceptual framework diagram

To attempt to understand this relationship, a previously constructed paper survey that this researcher constructed during a graduate-level instrument creation course was adjusted to electronic form and distributed to an appropriate sample of participants. The original instrument was academically field tested and also pretested by 34 defense contractors. This study's resultant online survey was additionally field tested by six individuals with terminal degrees and familiar with the topic. Resulting data is statistically analyzed and results reported. Attempts are made to draw conclusions from

participant responses. Opportunities for further research on these unique employees and their work in dangerous environments are also addressed.

Organization of the Remainder of the Study

Chapter 2 provides a review of the existing literature regarding major theories considered relevant to this inquiry. The majority of this chapter consists of the seminal works explaining the theory on motivation, compensation, and job satisfaction. Additional modern-day works are singled out and included as well. Chapter 3 details the research methodology and procedures for this study. The survey instrument is addressed, as well as results from a previously administered field and pretests. Test results and details about real survey data consolidation and analysis are discussed. Chapter 4 speaks to the actual data collected from the online survey and reports the resulting statistical observances. Chapter 5 discusses this inquiry's findings and formulates conclusions based on them. Research strengths and weaknesses, as well as limitations and opportunities for future research are included.

CHAPTER 2. LITERATURE REVIEW

Introduction

This chapter reviews the initial and contemporary literature regarding the factors this researcher has determined to be influential concerning defense contractors pursuing hazardous duty assignments abroad. Although the selection of which factors are influential to this topic is subjective, the inclusion here of the theories and groundwork regarding motivation, job satisfaction, compensation, and employee turnover all qualify. While there has been abundant coverage and discussion about each of these factors regarding workers in general, no specific research has been located regarding their effects on private sector defense contractors overall, nor on this particular workforce employed in dangerous environments.

While the absence of explicit preexisting research on this line of work makes adding to the existing body of knowledge appear troublesome, one benefit is that this investigation can serve as a jumping off point for corresponding studies in the future. In an attempt to establish a foundation for this exploration, prior investigations regarding similar occupations have been located and are included in this review. As with the inverted triangle described by Creswell (2009), this review is laid out with the broad topics described at the top level, with more applicable studies included leading to the apex focused on defense contractors deployed in hazardous environments. Accordingly, when previous efforts on similar lines of work could not be found, studies on nonspecific

fields such as contracting in general have been reviewed. These studies serve as an adequate base for additional job specific research.

Motivation

It is often assumed that the only motivation for private contractors to pursue hazardous duty assignments overseas is the often associated extreme compensation. Earlier academic work by this researcher /defense contractor/scholar-practitioner, however, revealed multiple additional possibilities. Recent motivation research too suggests that motivation is often the result of several factors versus just one. Elding, Tobias, & Walker (2006) suggest that worker employee motivation could possibly be the combination of individual drivers, value, history, and expectations, as well as job environment and organizational norms (p. 303). While such contemporary work about motivation will be reviewed, a discussion about motivation needs to begin with Abraham Maslow. His *A Theory of Human Motivation* (1943) was a groundbreaking look at what motivates individuals to do what they do. Later research into motivation often built upon the basis laid down by Maslow.

This foundational theory envisioned a human's motivational needs as a set of goals which should be met in an ascending order (i.e. lower goals met before higher ones). This ascending ladder of basic human needs consists of five sets of goals that build upon each other, in order of priority. The rungs on Maslow's ladder in ascending order are physiological, safety, love, esteem, and self-actualization (Maslow, 1943). In this design, individuals are almost totally focused on the particular step in which they are currently at. The bottom physiological rung, for example, concerns one's needs for basic

necessities of life such as air, food, shelter, and so forth. Once these needs have been met, Maslow envisioned people moving up to the next goal—but only one at a time and in order.

After physiological, the objective of safety refers to the need for individuals to have control over their surroundings and not be caught off guard by unpredictable circumstances. Examples for this level include personnel and financial security, as well as the capability to obtain and sustain one’s good health. It is here where an association between this seminal work on motivation and research about an employee’s motivation to obtain employment in a hostile area can be recognized. While it is easy to see the link in regards to the desire to obtain often inflated salaries, the connection with this level’s concerns about security is murky, though relevant. Hazardous duty assignments, for example, are ripe with instabilities that are the opposite of this step’s requirements. This association is equally true in regards to concerns about one’s health in often chaotic environments. Depending on the individual, some defense contractors retreat from being asked to deploy specifically due to this factor’s dangerousness. Maslow (1958) explained that some individuals, for example, try “frantically to order and stabilize the world so that no unmanageable, unexpected or unfamiliar dangers will ever appear” (p. 34). The goal of safety, then, like its predecessor and successor aspirations is entirely dependent on who exactly is climbing the ladder.

Less connection with this research can be made with Maslow’s next step, the need for love. This societal desire concerns the need for family and a sense of belonging to some social group beyond one’s small circle. Again, the high compensation in the

contracting industry may support this rung's importance. By providing for their close family and friends, individuals seek to guarantee their own acceptance and admiration by others (Oleson, 2004). In a contemporary quantitative study involving 338 nontraditional students, Oleson (2004) confirmed this relationship between Maslow's needs and money attitudes. This need for belonging is also present in the fourth goal of esteem.

The need to realize self-esteem is very important to many individuals. Maslow (1958) points out that "all people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, (usually) high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others" (p. 37). Whereas this is accurate for many in general, this need for some defense contractors can be seen as critical. Many such workers have had no prior military experience, and the successful completion of a tour in a hostile environment may be (and often is) seen by many as a necessary step to be viewed as credible to peers and customers alike. Maslow saw this rung as a two-step process: the first being the need to gain the respect of others, and the second being the need to gain self-respect through competence from things like experience and training.

The last and final of Maslow's steps was self-actualization. This is the highest level and represents an individual reaching their full potential. As with the lesser goals, this ultimate step cannot be achieved until all lower prerequisite rungs have been reached, and mastered. What exactly this level encompasses is completely linked to the specific individual. For some individuals, it may take the form of being an ideal parent, yet for another such as an inventor, it may be creating the ultimate contraption (Maslow, 1943).

Some defense contractors may perceive applying their trade in a dangerous location as being the definitive step in their professional (and sometimes personal) lives.

Maslow's work was foundational for the study of motivation and is directly applicable to a discussion about why some civilian defense contractors seek hostile environment assignments. Although the lack of prior research on the topic of motivation necessitated his initial qualitative approach, ample subsequent inquiries have tested Maslow's theory against actual investigation results. His philosophic assumptions were based on what is today referred to as interpretivism or social constructivism. The hierarchy of needs serves as an excellent foundation on which to build upon for this study, as well as countless previous investigations on motivation, and future ones as well.

Frederick Herzberg's *The Motivation to Work* (1959) was the first of many by the author that looked into the motivation factors that influence workers. Although not about employees of any specific line of work, its observations have been used across all industries, and added to the foundation on which much future work regarding motivation has been built. It was theoretical overall, but was backed up by some experimental work that the author and his coauthors did with employee surveys. Herzberg and his associates separated work motivational factors into two groups – hygiene factors and motivators, and their resulting idea was labeled *motivation-hygiene theory*, also known as the *two factor theory* (1959). The idea with this concept is that employees are influenced by two sets of factors. Hygiene factors were described as work elements that were necessary for work to be performed such as infrastructure, administration, and salary. Motivators included factors like recognition, personal growth, and advancement.

For this particular research on private sector defense contractors, the principal assistance is the author's finding that benefits resulting from increases of certain hygiene factors (such as pay, status, and job security) are short-lived, and are not enough to keep individuals committed to their organizations. Belief in the worth of the work itself can be enough to keep some workers who are dissatisfied with some of their hygiene factors from early departure. Although much of this seminal work was qualitative overall, some early experimental quantitative support did back its findings. Herzberg's quest to explain worker motivation has been used multiple times over the years by those seeking knowledge of worker motivation factors and remains pivotal research that continues to influence inquires into this subject matter.

Another applicable early work on motivation, yet more contemporary than those previously described is John S. Adams's (1965) *equity theory*. This theory regarding what makes individuals perform as they do at work suggests that employees are motivated in accordance with how fairly they perceive they are being rewarded. They expect to be compensated for their efforts in the same manner as their peers (Adams, 1965). The idea is that if an employee decides that they are being treated unfairly, they will take actions to rectify the situation. This remedy can often be a lowering of performance, or worse, an employee-chosen termination (Adams, 1965). This theory can be equally applied to employee motivation, and also to attempts to understand causes for employee turnover.

Being also a somewhat early work, this qualitative study does have some experimental quantitative contents. Adams's (1965) effort was the first major research

on motivation that introduced the effects of others on individual employee enthusiasm. This view of motivation is very relevant to an investigation regarding a defense contractor's aspirations to pursue assignments in dangerous environments. Contractors are seldom the only private sector individuals in their workplace, and real or supposed comparisons are continuously being made regarding performance and imagined compensation. This is true for not only employees from the same private organization, but judgments are often made regarding other firms and programs. These employee opinions about equity are major reasons why some choose to quit their assignments overseas. Defense contractors could have been an excellent population for Adams's research.

As mentioned previously, money has often been considered the principal motivator to get employees to perform their jobs, but many contemporary researchers have questioned the strength of this assumption. Some researchers, for example, proclaim that it is at least equally important for employers to identify prospective employee preferences and hire only those with ones similar to the organizations. Prendegast, (2008), for example, conducted a study using multiple previously collected employee surveys and found that money indeed does not always ensure organization-employee match. He concluded that when shared preferences are considered important in the selection and hiring process, employee motivation will come from individuals that share common drives with their firms, instead of just being interested in their own compensation. According to Pendegast (2008), "if you cannot use money to align incentives, then aligning preferences might be a useful alternative" (p. 204). This is one

example of employee buy-in that has been declared necessary for firms to obtain to keep their employees. Finding and maintaining workers that intrinsically care about what they are doing can be difficult, however, and often requires considerable time and effort.

Buy-in, as well as a number of the current research efforts concerning motivation, is specifically applicable to the defense contracting industry and some of the associated positions in hostile environments. The high level of compensation often influences this line of work, and makes it ripe with employees that frequently take off without warning and move onto competing organizations or programs. Consequently, holding on to employees chasing hazardous assignments is extremely important to contracting companies. The time, energy, and money spent to replace departing members make efforts to retain employees well worth the effort.

Modern motivation research has also included revisiting earlier explorations of both intrinsic and extrinsic factors. The former variety often refers to the pleasure and internal value one reaps by performing a task, while the later has come to represent external rewards such as compensation and bonuses (Pate, 1978). While often taken for granted that increased extrinsic rewards will spur worker motivation, some suggest that such incentives can ultimately be harmful. Deci (1976), for example warned organizations to expect negative consequences if rewards are given on a noncontingent basis. The debate appears to center around the possibility of organizations attempting to manipulate workers by withholding rewards until desired actions are performed, and the subsequent dissatisfaction by controlled employees.

A related consequence can be viewed in the field of hazardous duty civilian deployments, where automatic massive compensation amounts could lead to less than stellar performance. This type of potential downfall is the topic of a recent study by Jensen and Stonecash (2005). The authors investigated the positive and negative effects that can result when services that were once provided by public sector organizations are contracted out to private sector firms. The authors studied previously collected data and observed definitive proof does not currently exist to conclude that one sector trumps the other. Although many argue that moving tasks from a low-powered public sector incentive structure to a high-powered private structure should lead to better effectiveness and innovation, these researchers could not prove that actually occurs. According to the authors, such a view is “somewhat naïve, because it implies that the private sector will always be more productively efficient, an inference that is not supported by theoretical or empirical research” (Jensen & Stonecash, 2005, p. 781). Some evidence, however, did indicate a short-term savings and increase in quality from private sector usage.

Another related modern-day attempt to understand worker motivation studies employee attachment. Meyer, Becker, and Van Dick (2006) targeted two specific aspects of attachment – employee identity and commitment. Whereas identity refers to an employee’s sense of belonging to a group or organization, commitment describes the compulsion to take a specific course of action. The authors built a model to help explain two key forms of employee attachment and their links to self-regulatory processes, motivation, and behavior and found evidence that such relationships do indeed exist (Meyer et al., 2006). Their conclusions support their hypotheses that such associations

exist, and lay the groundwork for future relationship studies. Their investigation is applicable to this study of contactor motivation. For deployed personnel, having strong levels of both of these features is very beneficial for their organizations. As with most organizational performance topics, the role of the leader has been identified as crucial in achieving requisite levels of identity and commitment. According to Meyer et al. (2006), “leadership directed at building strong identification with a collective is likely to affect commitment indirectly, and that the nature and focus of the commitment will depend on whether the identity is with the leader him/herself, a workgroup, or the organization” (p. 677). Hazardous duty assignments, however, provide tremendous leadership challenges.

Being able to identify with a leader or organization is often difficult for those deployed. Outsourced positions are often single assignments, where an employee is working only for their direct external customer. These customers have little to no influence regarding the employee’s allegiance or commitment to their actual organization. For those deployed, interaction with their organizational leader is often only experienced through e-mail, or a periodic phone conversation. These limitations have a real impact on individuals who choose to operate overseas and often virtually on their own. While this study focuses on why individuals choose to pursue such assignments, it also looks to what factors influence this pursuit. In exploring the affects of employee motivation, organizational commitment and identity do appear to be very influential. The success of unaccompanied deployments may also not be singularly dependant on the individual employee. A recent study assessed displaced employees on six dimensions of performance: results, communication, motivation, interpersonal

relationships, collaboration, and purpose, found that their success is dependent on effective leadership (DeRosa, 2009). According to the author, firms with this type of challenge “should select leaders who can work with the key characteristics required to manage effectively from a distance” (DeRosa, 2009, p. 11). Organizations then also have key roles in influencing whether or not individuals do well during the assignments that this research is investigating. The proper placement of deployed contractors as well as their home-base leaders can effect worker job satisfaction.

Job Satisfaction

The issue of job satisfaction needs to be considered when searching for the reasons one pursues certain types of employment. This is especially true for positions some would consider extreme, such as assignments in dangerous environments. One could supposedly presume that someone pursuing such a job for whatever reason would be pleased once obtaining it. Important here though is the maintenance of satisfaction once a position is acquired. Recognizing that defense contractors are very often technical workers, knowing the ins and out of this type of employee is required understanding for successful contracting managers.

The contemplation of job satisfaction has a long history in the study of organizational behavior and organizational development. The search to understand and influence employee satisfaction has abundant obvious advantages for organizations. Although similar to motivation, job satisfaction more specifically means the pleasure an employee gains from having their job. The link between motivation and job satisfaction

is evident in that a gain in one often brings a corresponding increase in the other. Maslow's (1943) enlightening work regarding motivation is equally instructive regarding satisfaction. Obtaining and maintaining desired positions are requisite steps to ascending to the next level of Maslow's ladder of needs. Additional ties can be made between earlier well-known studies and job satisfaction. The famous Hawthorne studies from the 1930's, for example, called attention to the effects of the peer group and supervisors on performance and morale (Locke, 1990). Although not purposely investigating job satisfaction, Hawthorne's research into employee performance identified job satisfaction as very important.

Another influential early work regarding job satisfaction is the previously mentioned research Herzberg conducted in 1959. Although principally an investigation about motivation, his 16 hygiene factors are described as extremely influential on job satisfaction. Multiple contemporary investigations about job satisfaction even use Herzberg's motivation-hygiene theory as the basis for their inquiries. Maidani (1991) for example, used this theory to investigate job satisfaction differences between public and private workers. He conducted hypotheses testing via a quantitative questionnaire filled out by 468 public and private sector employees and found that public sector employees overall were more satisfied with their jobs and concluded that Herzberg's hygiene and motivation factors were indeed sources of satisfaction (Maidani, 1991). This particular research is also very applicable to this private sector research regarding defense contracting.

A further job satisfaction investigation about Herzberg's factors and specifically contracting agencies is Tamosatis and Schwenker's (2002) research to identify which factors relate to contractor recruitment and retention at a Department of Energy (DOE) site. Specifically concerning technical contractor employees, this quantitative investigation conducted hypotheses testing via a multi-part survey filled out by over 1,000 industrial personnel. The authors found that these highly skilled workers seek a greater degree of job responsibility and program ownership than nontechnical personnel (Tamosatis & Schwenker, 2002). Additionally, the authors recommended that management reward their contractors with increased opportunities and autonomy vs. only increased compensation. While seemingly restricted to only general technical employees, this job satisfaction research is comparable to most of the defense contracting industry, where government programs hire private sector technically skilled workers so they are not required to find, train, and maintain their own.

There has been a lot of research conducted about technical personnel and their particularities. Understanding the idiosyncrasies of this ever-increasing sector of the workforce is critical for organizations to maintain any type of competitive edge. Helping skilled employees achieve job satisfaction is one method to retain a qualified staff. One difficulty identified by contemporary research is the lack of organizational commitment by skilled workers. Gomez-Mejia, Balkin, and Milkovich (1990) found during their research on technical workers that many such employees do not completely identify themselves as part of their current organizations, but rather as independent contractors working on a temporary basis until better opportunities present themselves. Although

neither a quantitative nor qualitative study, the authors' collaborative article probed the intricacies of technical personnel and found that the organization's reward system can make a difference in helping firms retain skilled workers by increasing their job security. An additional study about a group of engineers reported that between one-third and one-half preferred receiving more challenging research in their current position than being promoted to management (Bailyn, 1991). Technical workers such as defense contractors require not only specific rewards to make them happy, but also tend to be more satisfied under some leadership styles opposed to others.

Abundant research has also been conducted into the leadership styles preferred by technical workers. Applying the appropriate leadership style may help defense contracting firms retain their skilled personnel so often outsourced to government customers abroad. Not surprisingly, the time and again admired transformational type of leader is often pointed to for overseeing skilled workers. According to Geraci (1994) in his discussion on the special handling sometimes required for technical employees, "the best manager for technical professionals is the one who knows what makes them tick, and who makes their high needs for autonomy, achievement and professional growth work for both the employee and the organization" (p. 13). Even 50 years ago the need for leadership flexibility for unique circumstances was recognized. According to Katz (1960), a manager who can "recognize intellectually that his implicit assumptions about organizational behavior are based on an inadequate and mechanistic set of beliefs will better understand why unsought-for and unanticipated deviations result from

implementation of management's preconceived plans” (pp. 101-102). While leadership is only one factor affecting an employee’s job satisfaction—it is a major one.

Humphreys (2001) points out that the workplace is advanced everyday by the technological innovations that these skilled workers produce, and innovative leadership is required to maintain advancements. Deployed defense contractors serve in unique circumstances and often require inventive leadership to ensure their job satisfaction. The transformational leadership style is inherently flexible enough to accommodate the idiosyncrasies of these particular skilled contractors. Although much of the research on transformational leaders has focused on their effect on employee’s motivation, the consequent effect on worker job satisfaction should also be asserted. Such a leader’s charisma, inspirational motivation and individualized concern have direct positive impact on job satisfaction (Bass, 1985; Bass & Avolio, 1994).

In addition to significant prior research about job satisfaction due to leadership alternatives, there has also been some initial exploration into job satisfaction and organizational commitment differences between contractors and more traditional employees. Here, the later type of worker is considered a permanent salaried employee with no particular end date for their jobs. Contractors on the other hand are viewed as workers providing services for a fixed period of time. De Cuyper, Notelaers, and De Witte (2009) scrutinized these different types of workers and investigated job insecurity and employability in relation to job satisfaction and affective organizational commitment. The variables job insecurity and employability refer to the uneasiness and lack of control often experienced by temporary workers such as contractors (Berntson & Marklund,

2007; Cheng & Chan, 2007). Their quantitative study conducted hypotheses testing on the results of quality of work questionnaires filled out by 623 respondents from 23 Belgian organizations. Their findings were surprising in that temporary workers such as contractors which are seemingly on an organizations' periphery have similar feelings about the relationship of these variables as those permanent employees in the organization's core. De Cuyper et al. (2009) also point out that "most innovative and inspiring for future theoretical development was our finding that workers in different contracts may have different interpretations about what constitutes a stressor or about what signals a weakened employment relationship" (p.202). This finding is important for research about defense contractors since the variety of different programs make a bewildering array of different contracts. While research can be done on contractors in general, one must remember that contract particularities can also have an effect on employee sensitivities.

While the difference between contractors and regular salaried workers is commonly known, the differences between workers on different types of contracts are often unclear. Vague too is the differences in job satisfaction between the different types of employees, but some previous research on this topic has been done. VandellHeuvel and Wooden (1997) separated random Australian contractors into two groups: independent and dependant, and surveyed each on levels of job satisfaction versus regular salaried workers. While it was not surprising that contractors in general enjoyed more satisfaction vs. salaried employees, their quantitative investigation illuminated a marked differences between those normally tied to a repetitious contract and a particular

customer (dependant contractors) in opposition to less-restricted self-employed (independent) contractors. According to VandelHeuvel and Wooden (1997), “the most likely explanation for this difference is the greater freedom and autonomy such workers have in their working lives compared with the dependent contractors” (p. 18). In light of these terms, most defense contractors may be seen as the dependent type, due to their belonging to usually large contracting organizations. Although there are a number of the private self-employed independent types in existence, they are not examined during this research.

Some contemporary investigations have recently sought to determine the affect of certain behaviors by organizations and their leaders on the job satisfaction of employees. Yi-Feng (2009), studied resource-based theory (RBT) factors on job satisfaction in a quantitative investigation that specifically targeted the effects of transformational leadership. After examining sales managers and employees of the marketing department at a life insurance firm, the author found that this type of leadership had positive effects on employee intrinsic and extrinsic job satisfaction principally because it inspires employee interdependence, collaboration, and cooperation to facilitate adaptation to complex surroundings (Yi-Feng, 2009). These advantages are very pertinent to research on outsourced technical workers such as defense contractors and their sensitivities to dangerous location deployments because parent organizational leadership can weigh heavily on worker job satisfaction.

Other relevant studies of late involve the consequences of stress on job satisfaction. While abundant stress-related research has been conducted, one

investigation specifically tracked the relationship of role stress on job satisfaction. Fried et al. (2008) attempted to isolate this association by using preexisting data from independent samples involving over 20,000 workers. The authors built a model to determine how job performance was affected by role stress. Significantly, their model placed the mitigating factors of job satisfaction and propensity to leave in between the two criteria. The investigator's hypothesis was that job performance would be affected by the amount of role stress an employee was experiencing, and that this stress would be significantly influenced by existing job satisfaction and one's propensity to leave their organization (Fried et al., 2008). Data analysis ultimately revealed a positive relationship between stress and performance and also showed that role stress was both directly and indirectly related to performance through job satisfaction and propensity to leave.

The findings of this particular inquiry involving satisfaction are applicable to research on deployed defense contractors for several reasons. First, workers in this industry are known for their fragile organizational commitment, and rare propensity to leave research is important; second, stress/satisfaction studies are relevant due to the strain often encountered during hostile deployments; and finally, findings about performance levels due to job satisfaction are infrequent and may provide organizations advice on retaining fleetly employees. According to Fried et al. (2008), "because job satisfaction is a significant determinant of both job performance and propensity to leave, managers should take steps to increase job satisfaction among their employees" (p. 323). While this particular stress/performance study was not industry specific, this investigation's findings do lay a foundation in helping determine the importance job

satisfaction has on other employee dynamics like organizational commitment and dedication. Supplemental industry specific data may be able to build upon this research and provide better insight into why some workers perform the way they do under differing circumstances. Although job satisfaction is often effected by stress, this can often be offset by the amount of money an outsourced technical employee earns.

Compensation

As previously mentioned, the abnormally high compensation amounts for hostile area deployments are often considered the only reason civilians choose such work. While always included in appreciated benefits, earlier academic exploration by this researcher has shown pay to be just one of many reasons individuals seek this type of profession. It's apparent importance and atypical size do warrant compensation thorough consideration, and thus a review of early and contemporary research on this topic is provided. One of the pivotal foundations of compensation research is the previously mentioned equity theory by John S. Adams (1965). While not specifically stipulating that workers perform better as wages are increased, this idea does acknowledge that pay is influential on employee output. The theory also points out that workers compare their toils and compensation to other workers, and make judgments on what is and is not fair reimbursement.

Another principal theorist that concentrated on the influence of money on worker motivation was McClelland. Although this theorist is mostly known for his Theory of Needs and its components of affiliation, achievement, and power, he also conducted

some fundamental studies regarding compensation. In his psychology periodical article “Money as a Motivator: Some Research Insights” (1967), he summarizes multiple quantitative studies previously conducted to measure the effects of increased wages on worker performance. He used the previously developed discriminators from his Theory of Needs model to explain the wage/performance relationship. This summation was significant for its time because it helped solve the contradiction between the then current belief by psychologists that wages did not matter, and employer convictions that they did. While only 45 years old, this research is one of the earliest studies found that directly represents seminal work on wages and performance, and has often been used as a jumping off point for additional compensation research.

Two themes that modern-day investigations regarding wages have focused on are particularly relevant to defense contractors in general, and even more so for those contractors that deploy to dangerous locations. The first is research into the pluses and minuses of incentives, or performance-based pay; the second, is alternative types of compensation for certain types of employees such as technical personnel. These topics directly relate to the increased wages often received by deploying contractors and the technical skills they very often have. These unique workers are represented well in these specific niche investigations.

One significant theoretical inquiry about incentives focused on how employees place different values on amounts of pay. Mitchell and Mickel (1999) investigated the specific value of money to different employees before any such prior research existed. Although their exploration was qualitative, they established two key findings: money

means different things to different employees, and firms need to expend efforts to identify what means what to whom. The latter of these two discoveries can be crucial to organization hiring managers during the hiring phase when compensation options are being weighed. Taris, Feij, and Capel (2006) also demonstrated the adverse effects of unmet worker expectations, and again reiterated the need to identify particularities of different categories of employees. Their study involved 1,477 workers, and showed that in general, workers expend greater effort when their particular expectations are met. This research dovetails nicely with the important consideration of how to please technical employees.

As stated, compensation does not always refer to money, and the term *employee* does not always represent every type of worker. Defense contractors are often technically skilled employees and ample work has been done to try to figure out if this type of worker is better compensated by means other than money. Early research on reward options for technical employees was mainly descriptive and lacking in quantifiable data. Consequently the quest was on to try and determine if this type of worker desired increases in intrinsic rewards such as the ability to communicate freely with others and lack of stifling leadership vs. standard extrinsic rewards like salary increases. Reif (1975) explored the importance of extrinsic and intrinsic rewards through a quantitative study using a survey of 354 workers from six organizations. He found that although extrinsic rewards were somewhat related to intrinsic rewards, neither was exclusive and suggested firms know their employees and use one or the other, or a

combination of both. Other research attempts failed to establish a relationship between these different types of rewards.

Several modern day investigations attempting to expand this particular research have determined that technical workers on the whole do desire alternate methods of compensation. Honig-Haftel and Martin (1993), for example, surveyed technical employees from 111 firms in a quantitative study hypothesizing that money had the most influence and found that nonmonetary rewards had immense value to the workers. Not only was this important for organizations to know to keep their skilled personnel satisfied, its application would be a major determinant in whether or not they could even be retained. Financial rewards were still found to be important, but a blend of this and nontraditional compensation was preferred. According to the authors, an “incentive mix of monetary and nonmonetary reward systems was observed to be significant” (Honig-Haftel & Martin, 1993, p. 267).

Examples of the additional rewards favored by skilled workers include organizational recognition, promotion to more challenging work, advanced training, and specific bonuses linked to performance levels. Gomez-Mejia et al. (1990), recommend that leaders of these types of workers even go so far as to let technical employees conduct individual interests during a portion of their company time. In addition to alternative preferences for compensation, some researchers have even proclaimed that technical workers prefer alternatives even to promotions. Bailyn (1991), for example, reported when examining a group of engineers that between one-third and one-half preferred receiving more challenging research in their current position than being promoted to

management. These are bold assertions that organizations employing skilled workers need to consider.

The subject of performance based pay has also been increasingly researched by numerous investigators trying to determine the best type of reward systems. Rewards ultimately affect job satisfaction, and contented employees are less apt to leave an organization. A literature review by Peterson, Woodard, Urech, Daw, and Sookanan (2006) examined 17 articles regarding the relationship of performance and monetary enticements and found a positive relationship between them. Green and Heywood (2008) recently conducted a quantitative study that resulted in evidence that performance based pay positively effects job satisfaction. This study used the interviews of 11,849 individuals to test their hypothesis that performance based pay increases employee motivation and performance. Their study specifically showed that profit sharing and bonuses increase individual satisfaction as well (Green & Heywood, 2008).

In another study on this topic, Shieh (2008) used 800 questionnaires in a quantitative investigation testing the result of financial incentives on individual mental motivation. He points out that “an organization must decide how to compensate its laborers objectively and reasonably for their contributions in order to facilitate corporate development and to ensure employee satisfaction with monetary compensations” (p. 827). He further points out that “compensation design is a topic that must be taken seriously” (p. 828). All told, evidence shows that performance-based pay is influential on the performance and job satisfaction of technical workers. Defense contracting firms

should take notice of this research and construct reward systems that are in sync with the idiosyncrasies of this skilled workforce.

Compensation rates overall in the contracting industry are considered high compared to normal salaried employees (Kunda et al., 2002). This is especially true for skilled defense contractors, and even more so for those in that profession carrying out their duties in dangerous environments. There is a straightforward reason for the extraordinary pay however. Prysock (2004), when attempting to make clear this justification explains that often deployed contractors “work 10-hour days, seven days a week for eight straight weeks; at night personnel are confronted with machine gun and mortar fire into their base camps” (p. 68). While this is not always the case everywhere, it often is in both urban and rural locations in places such as Afghanistan and Iraq.

Additionally, contractors are serving in conflict locations worldwide that are not always evident to those counting on newspapers and television for their sense of awareness. Although locations vary, they often hold in common a tendency to be in undesirable surroundings. Whereas disagreeable jobs are frequently equated with lower wages, the opposite is often true for deployed skilled workers. According to Robinson (1988) in his article on industrial workers, “the typical hazardous industry may offer less worker autonomy, promotion possibilities, employment security, and earnings than the typical safe occupation, while simultaneously offer higher earnings than an (untypical) safe occupation that has identical skill requirements” (p. 243). Traditional attitudes that associate hazardous employment with dangerous low wage factory work need to be

broadened to include high wage deployments to conflict areas by experienced technical employees.

Why in the first place are contractors doing what they are doing? And why are highly skilled workers working on a contract basis and not part of a seemingly more stable employment circumstance? Kunda et al. (2002) explains that even though traditionally middle-class Americans used to believe that working for a reputable company would promise life-long security, recent worldwide events over the past several decades eroded that perception. Unprecedented large-scale layoffs have made the job market more volatile and job tenure is perceived to be much shorter than previously thought of. The resulting contingent labor employees consisting mostly of contractors is now estimated at approximately 20-30 % of the total workforce (Kalleberg, 2000). According to Kunda et al. (2002), “a significant proportion of Americans are contingently employed; this proportion has increased over the past decade; and technicians, professionals, and managers represent a larger portion of the contingent labor force than in the past (p. 235). Contracting then is on the rise, and the precarious circumstances of defense contractors deployed in dangerous environments apparently will continue to have them receiving unusually high levels of compensation.

These high salaries do not follow the traditional model for labor market theory, in which less stable positions normally receive less money. Osterman (1982) described the labor market as being made up of primary and secondary jobs. The former labor sector consisted of stable positions with job security and career ladders, while the latter represented less steady temporary work such as contracting with lower wages (Osterman,

1982; Robinson, 1988). Today's contractor positions reverse this idea, with individuals making huge sums for short fixed deployment periods. Being nontraditional, this workforce is often overlooked by mainstream labor researchers (Cappelli, 1999). This disregard bars a true understanding of active employee realities and hampers labor market evolution by concealing opportunities for potential freelancers.

Some however argue that contingent employment jobs such as defense contracting offer more benefits than traditional jobs. Kunda et al. (2002), for example declare that these positions are:

A choice rather than a necessity; that it represents liberation rather than isolation from the workplace; that uncertainty about employment is actually minimized and that flexibility enhances personal control; that contractors receive more money than permanent employees because they are paid for every hour that they work at rates that reflect a premium for skills; and that full use of their skills results in a sense of self actualization rather than estrangement. (p. 238)

The recent rise in contingent employment opportunities has also been accompanied by a lessening of some of this market's negatives. Kunda et al. (2002) adds that there also have been developments that lessen such an employee's insecurities, isolation, and costs. Principal among these is a rise of affiliations such as professional associations for technical personnel. These, coupled by an increase of periodic respected certifications, connect these once cut off specialists by offering advice, support, and networking opportunities.

Compensation is a major factor to be considered by technically savvy skilled contingent workers considering hazardous assignments. Although there are several other influential considerations, the ability to make a very sizeable amount of money in a relatively short period of time demands consideration. This modern-day fiscal reality also affects an alarming lack of organizational commitment, as talented employees are actively pursued by competing firms. Defense contracting firms not mindful of coddling their often isolated, outsourced specialists risk losing them in the end, or worse in the middle of their agreed upon deployments. This predicament leads to another distinctive attribute associated with deployed defense contractors—serious employee turnover.

Employee Turnover

A final reflection regarding existing literature related to deployed civilian defense contractors overseas is on employee turnover. According to Few (2008) in her work regarding contractors, “hiring the wrong person for jobs in high-risk locations could cause corporate managers to lose long-term continuity and overall effectiveness due to a high rate of employee turnover” (p. 142). Turnover affects both organizations and employees, and accordingly the body of knowledge on this particular topic is vast (Griffith, Hom, & Gaertner, 2000; March & Simon, 1958; Mobley, 1977). Normally viewed as negative, turnover can even be a positive situation for a firm if an employee is a mistaken hire in the first place or is an underachiever. It can also be a helpful incident for an employee who finds a better position. Holtom et al. (2008) in their writings about turnover state that “managers know that while turnover in general may be disruptive or

harmful, not all turnover is bad; in fact, when poor performers choose to leave, this can be quite functional” (p. 236). It is however normally a negative situation for all concerned, and subsequently has been the topic of abundant research. Coverage for this investigation will focus on the turnover consequences for both organizations and employees and efforts to identify and minimize the turmoil and drama often resulting from these experiences.

Early research on turnover attempted to develop an understanding about why employees choose to leave their organizations. This early focus usually centered on job satisfaction, and its positive and negative results regarding turnover (Holtom et al., 2008). Although satisfaction was identified as a key component in the decision-making process leading to depart, additional factors began to become evident. Attempts were made to identify the factors most responsible for decisions to leave and the construction of some early models depicting the turnover verdict process began (Mobley, Griffeth, Hand, & Meglino, 1979). Harrison and March (1984) brought a statistical analysis to the psychological problem of turnover, and what causes employees to quit. Their quantitative study using existing turnover data focused on the values employees placed on the desirability of an organization and price to be paid to leave it once employed, or the perceived gain once departed. Again, these studies were employee-focused, but steps were taken to begin to analyze the effects that contributing factors such as gender, economic conditions, education and technical competence have on departure decisions.

Employee centric studies continued with the understanding that organizational commitment can have a heavy influence on an individual’s satisfaction. Curry,

Wakefield, Price, and Mueller (1986) conducted an early quantitative study to determine the relationship between organizational commitment and job satisfaction. The investigation consisted of questionnaires of 508 female employees working in health care in a western state. The author's attempts interestingly failed to establish that each variable had positive or negative effects on the other. According to the authors, "our analysis did not indicate that satisfaction is a determinant of commitment, a commonly held position, or that commitment is a determinant of satisfaction" (Curry et al., 1986, p. 854). Their surprising findings stimulated increased examination of influential factors affecting satisfaction and commitment. Although solid effects of one upon another is still lacking, research has pointed to job satisfaction being more influential on employees voluntarily terminating than organizational commitment (Tett & Meyer, 1993). These specific investigation topics continue today as researchers continuously try to determine the effect of one upon the other.

Early models also attempted to explain the path one goes down when contemplating voluntary termination. Hom, Katerberg, and Hulin (1979) tested early intention to quit models (Fishbein's behavioral intention model, and Porter's organizational commitment model) along with the reenlistment decisions of 252 National Guard members to conclude that while it may be possible to predict individual termination intent, a multitude of factors must be known. One important factor was identified as critical—employee attitudes that affect their job behavior. The authors suggest that "a knowledge of attitudes toward job aspects gives an investigator or a manager specific knowledge about what aspects of a work situation to change to attempt

to prevent unwanted turnover” (Hom et al., 1979, p. 289). Investigators also attempted to determine the possibility to predict employee actions once the decision to terminate was made.

Early studies also attempted to identify the consequences for organizations resulting from turnover. Obvious outcomes such as loss of revenue and increased overhead were calculated, but occasional investigations also pointed out possible positive results. Dalton and Todor (1979), for example, examined the implications of turnover on an organization from the viewpoint of four disciplines: (a) organizational, (b) economic, (c) sociological, and (d) psychological/social psychological. Their qualitative review of multiple turnover studies acknowledged that while a substantial reduction in the amount of turnover would have short-run positive consequences for an organization, the long-run implications may be dysfunctional for employees, organizations, and to society.

According to Dalton and Todor (1979), “there is evidence that turnover increases organizational effectiveness and innovation, assists the development of institutional management and inter-firm cooperation, and augments technological change” (p. 231). Investigations such as this were revolutionary in that they explained the benefits of turnover like consequential innovation, employee progression, and lessening stagnation. Turnover research continues today looking into the cost bore by firms and workers.

Today’s job market situation and global economic realities, however, have changed somewhat how turnover is viewed. Not only are external influences affecting the studies of turnover, but an established foundation now provides researchers the opportunity to conduct industry-specific investigations on this topic. Defense contracting

is an excellent example of a unique line of work which would benefit greatly from exclusive employee turnover research. While no specific work for this industry has been found during this investigation, developments in related fields have been located.

Some relevant findings have been discovered about turnover in positions in performance-related pay contracts. This form of labor market is similar to defense contracting because of the exchange of large salaries for specific performance by contingent workers. Scoppa (2003) developed an analytical model supporting the view that hiring firms would be held to honest payment of performance-based pay and bonuses in order to justify their costs during the hiring process for technical employees. This commitment to pay would be necessitated by the employee's implied threat to terminate if not compensated as previously agreed.

Investigations seeking the financial impact of turnover on all lines of work have continued. While industry-specific information is often vague, contemporary studies have been done that provide some numbers for this costly reality. According to Moncada and Sanders (1999), human resource directors of national firms estimate "turnover costs are between \$50,000 and \$100,000 per exiting employee" (p. 38). Different positions and lines of work will of course have varying average costs. Regarding such an average, Info-Tech, a London, Ontario-based consulting firm has estimated that on average, "turnover costs are pegged at 30 to 50 per cent of salary" (Vu, 2008, p. 9). This type of loss can be very troublesome for firms deploying defense contractors making over \$200,000 USD per year.

Another key turnover research investigation explored the relationship between an organization's use of pay-for-performance compensation plans and turnover. Zenger (1992) collected data from 984 engineering employees of two high-tech companies and found that use of merit based compensation may actually cause a loss of above average performers. The study points out that use of such systems often leads firms to overcompensate a few top performers while providing insufficient increases to the middle of the road and above average majority of employees (Zenger, 1992). Such systems often recognize only top performers and low performers at opposite extremes. According to the author (1992), "among those not at the extremes, the firm is systematically forfeiting those it underpays and retaining those it overpays" (p. 216). A similarity can be seen between this conclusion regarding pay-for-performance systems and the high turnover in the defense contracting industry. Although deployed contractors are regularly highly paid, the extreme apex consists of a small few, and members of the middle group of workers frequently run off.

In line with the aforementioned study is a very recent investigation that targets the relationship between performance levels and voluntary turnover. Anthony Nyberg (2010) sought to investigate if unique differences exist between the voluntary turnover rates of an organization's top and bottom performers. The author studied the attitudes and behaviors of more than 12,500 skilled workers over a three-year period to determine these differences. Clear evidence was found to differentiate the voluntary termination rates of these two different groups, and additional interesting findings also came to light. According to Nyberg (2010), "the negative relationship between performance and

voluntary turnover was stronger when pay growth was high than when pay growth was low, suggesting that voluntary turnover among higher performers is reduced in a manner consistent with the explanatory influences described in rationale underlying expectancy theory and equity theory” (p. 449). This theoretical study suggests that top performers will voluntarily quit less if they are being appropriately compensated. While this is not surprising, having supporting data buttresses this determination. Another factor recognized by this study is the impact of economic conditions on turnover. Again not unexpectedly, this research showed voluntary turnover to be less likely by all performers when economic conditions were down (Nyberg, 2010).

Much has been said about the level of commitment an employee has and the possible consequences this has on voluntary termination. Empirical evidence of the relationship between mentoring and turnover was provided by a quantitative study by Viator and Scandura (1991). The authors used 1,024 questionnaires returned by public accounting employees to demonstrate less voluntary termination in organizations that had positive mentors for up-and-coming employees. One mitigating factor in that relationship and resulting level of turnover was the resultant organizational commitment gained by mentorship. Payne and Huffman (2005) sought to investigate this extenuating influence in a quantitative study using two surveys involving 1,334 U.S. Army officers. Their hypothesis was that protégés have higher levels of affective commitment than non-mentored employees. The effect of active mentoring was apparent when the authors found that the vast majority of their mentored sample had higher levels of commitment and also lesser levels of turnover (Payne & Huffman, 2005). According to the authors,

protégés are less likely to quit because they have higher affective commitment (Payne & Huffman, 2005, p. 166). Once again, findings such as these are relevant to those leading offsite professionals such as defense contractors deployed abroad.

This literature review has interestingly identified a common mitigating factor that affects each of the above reviewed dynamics—organizational commitment. One’s identification with an organization can seemingly affect an employee’s current satisfaction, motivation, and turnover potential. Another aspect of this dynamic is the effect of an organization’s relationship structure. A study by Mossholder, Settoon, and Henagan, (2005) adds the importance of a firm’s social network circumstances into the mix of influences that determine organizational commitment. The authors tested their hypothesis that network centrality is negatively related to turnover by quantitatively studying 215 surveys from healthcare personnel. Although how this relates to the relationship situation between an employee and his or her leader may be clear to understand, the broader social situation of a particular position can be more obscure, yet significant. In describing this structure, the authors found that the relationship variables network centrality, perceived coworker support, felt obligation toward coworkers, and interpersonal citizenship behavior can predict turnover (Mossholder et al., 2005). Consideration of this dynamic is important to this research considering the solitary conditions often experienced while deployed aboard.

Reviewing separately the factors of motivation, job satisfaction, compensation, and employee turnover in regards to an individual’s consideration of hazardous duty employment is satisfactory, but looking at how these considerations affect each other can

be even better. One study (Tett & Meyer, 1993) does just that in conducting a meta-analysis of over 150 previous voluntary turnover studies. Results from the numerous investigations were compiled and commonalities captured and summarized. The authors found that satisfaction itself was more positively related to turnover than other previously believed factors such as organizational commitment and compensation (Tett & Meyer, 1993). In addition to satisfaction and commitment, these investigations also considered a worker's turnover intention/withdraw cognition. These additional elements were found to be heavily influenced by the level of satisfaction and commitment an employee has (Tett & Meyer, 1993). All of these aspects need to be understood when attempting to distinguish how employees ultimately reach their decisions to voluntarily terminate their positions. Such an understanding can be crucial for firms attempting to find the correct individuals to place in positions in hazardous environments.

Conclusion

This chapter reviewed several main themes affecting the decision by private sector defense contractors to pursue and deploy to dangerous areas around the world. Overall, the literature assessed provides an excellent foundation from which to build. The factors chosen—motivation, job satisfaction, compensation, and employee turnover—are all important considerations when viewing these deployment choices from not only the views of the contractors themselves, but also as seen by their respective contracting organizations. In general, the literature for most of these topics is relatively young, but broad. While ample existing literature exists for all of these subjects, none

has been encountered that predominantly relates to defense contracting, nor any specifically regarding deployment to hazardous environments.

While understanding the seminal works for each of the aforementioned factors is important, examining related contemporary works focused on contracting and contractors gets us closer to the topic of this study. When associated studies could not be located, investigations exploring scenarios similar to defense contracting abroad have been located and reviewed. Although a general assessment of these four influential factors affecting deployed outsourced technical professionals has been achieved, additional influences such as organizational commitment were often encountered throughout. Importantly, unique investigations such as the relational perspective on turnover by Mossholder et al. (2005) that directly speaks to the solo circumstances faced by deployed contractors have been assessed. Research on specific occupations such as defense contracting can be conducted based upon these common foundations. New industry-specific findings can be used to improve the current body of knowledge for particular lines of work, as well as expand the common knowledge base.

CHAPTER 3. METHODOLOGY

Overview and Research Questions

Overview

The purpose of this chapter is to make clear the methodology and procedure of this study. This chapter begins with a brief synopsis of the study's purpose and research questions, presents the research methodology and design, describes the sample and its setting, details the instrument to be used, and explains how data will be collected, analyzed and reported. A section also covers the validity and reliability of the instrument used, and another addresses ethical considerations for the study.

The aim of this study is to help understand what considerations are important to civilian defense contractors when they are deciding whether or not to seek out and accept assignments to hostile positions in areas such as Afghanistan and Iraq. An understanding of these considerations would be very important to contracting organizations and their hiring managers. Placement of the wrong individuals in such positions is costly to not only the firms involved, but also their government customers. Additionally, faulty placement could be detrimental to the employee him or herself. The goal of this study then is the attainment of a better understanding of what factors are important to these deploying contractors. This knowledge could help identify the appropriate candidates for these unique positions and lessen the chance of poor performance and costly turnover.

Research Questions

The research questions sought during this investigation seek to identify the perceptions defense contractors have about the potential death or injury associated with high income dangerous deployments, as well as perceptions concerning family circumstances and advancement potential after such an assignment. Considering that the prevailing view that increased financial compensation is solely responsible for desiring such work, several questions and hypotheses are being addressed in this study. These questions and their corresponding null hypotheses are listed below:

1. Is the increased financial compensation the only or main motivator for civilian defense contractors to seek positions located in hostile environments?
2. How do the factors of increased experience, family considerations, or concern about danger influence civilian defense contractors when pondering deployment to dangerous areas?
3. How influential are each of the considerations for civilian defense contractors when deployed in dangerous locations?

Hypotheses

Considering these research questions, the main variable for this study is a defense contractor's desire to pursue an overseas assignment in a dangerous environment. Although no true independent variables will be investigated in this study, the relationship between the increased compensation often associated with such a deployment and a contractor's perception about several specific factors are sought. In this type of investigation, researchers attempt to decipher if relationships exist between one variable

to one or more other variables or factors (Creswell, 2009). The factors that will be examined are the influence of increased deployment compensation, significance of a contractor's family situation, perception of advancement probability due to the supposed experience gained from the deployment, and the influence of the potential to be harmed or killed during deployment. The following three hypotheses guide the structure and analysis of this project:

H1 : There is a significant positive relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractors perception of possible injury or death during such a deployment.

HO1 : There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractors perception of possible injury or death during such a deployment.

H2 : There is a significant positive relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractors perception of advancement due to supposed experience gained from a hazardous duty deployment.

HO2 : There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractors perception of advancement due to the supposed experience gained from a hazardous duty deployment.

H3 : There is a significant positive relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractors perception of concerns about family situation.

HO3 : There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractors perception of concerns about family situation.

Research Design

This study investigates what factors are important to individuals in this unique line of work. The absence of preexisting research on these particular workers leads to this investigation's straightforward design. The methodology for this inquiry is quantitative descriptive research based on results from an online survey designed by this study's researcher. The instrument used was originally constructed during a recent graduate-level instrument course (Capella University's OM8027-Survey Research Methodology). This original course-related research assignment did not require Institutional Review Board (IRB) review. The instrument examined several considerations in an e-mail questionnaire with the aim of determining the perception of those factors on a defense contractor's desire to deploy on a high-paying dangerous assignment. The factors investigated were family considerations, deployment effect on career advancement, and concerns about danger when deployed on highly paid assignments in hostile locations. The dependant variable was the desire to attain and

maintain such a hazardous deployment. Elementary data analysis was conducted and presented regarding the responses collected during this research assignment.

As described in the Data Collection section, this investigation uses a modified online version of this earlier e-mailed questionnaire. An IRB application, along with the full survey and required supplemental forms were submitted and received approval. A larger appropriate sample was identified and presented with a link to the online instrument. Descriptive data analysis was then conducted and results summarized.

While numeric results can seem to be too elementary for original work, it is hoped that the major considerations influencing employees in this line of work were identified and prioritized for future investigations by this, and other researchers using qualitative and mixed approaches. This quantitative research hopefully categorizes what is and what is not important to contractors seeking hazardous assignments. Future investigations employing other methodologies can build on these findings and possibly explain the intricacies about which different factors are important.

This initial research uses data obtained from individuals actually in this distinctive line of work. Validity concerns are lessened by using an appropriate sample and this design encompasses only data from individuals from this industry. Many potential study participants were actually deployed in arduous environments, and the use of online surveys made data capture possible. Although the unique physical dispositions of these workers is limiting, the participation of a restricted amount of contributors can help identify the attributes of larger populations (Fowler, 2002). Again, this data capture was a starting point for further in-depth follow-on studies.

Sample

Although preexisting research regarding civilians voluntarily working in hostile fire areas is rare, one recent study specifically looked into government civilian workers in such assignments. This investigation laid the groundwork for understanding why public sector employees choose to deploy, but its author, Few (2008), declared that “research is needed to identify the motivational factors for employees from private and non-profit corporations who seek employment in high-risk environments” (p. 144). Accordingly, this study focused specifically on the private sector workforce.

While the population of the study is every civilian defense contractor with the opportunity to pursue seek out and obtain an assignment in a hazardous environment, such a study is not only impractical, but impossible given the limited resources of the researcher. Therefore, this study uses instead the responses from 112 defense contractors who are either currently deployed abroad in either Afghanistan or Iraq, or are in positions that routinely deploy to these locations for six-months to one year at a time. This sampling strategy was random in that the population of deployable contractors is immense and only chance individuals were offered an opening to participate in this investigation.

Many stateside personnel have already completed at least one of these dangerous duty assignments and may potentially return in the future. The goal was to reach out to as many suitable participants as possible during a given period of time. Fowler (2009) suggest that “most sample size decisions do not focus on estimates for the total

population: rather, they are concentrated on the minimum sample sizes that can be tolerated for the smallest subgroups of importance” (p. 45). The sample frame for this study consisted of mostly contractors in the intelligence field from who support military customers overseas. In general, participants possess technical skills and abilities that are valuable to their customers mainly because these clients either do not have organic assets to perform these functions themselves, or have inadequate amounts of personnel to do so. These contractors are mostly deployed singularly, but are often surrounded by multiple other contractors from other defense contracting organizations.

Most participants in the sample frame belonged to one organization; however a snowball approach randomly influenced multiple others. Permission was obtained to query the original organization’s personnel about their desire to participate in the study. Respondents from the one organization were selected based on their particular occupation, or program, and their likelihood of being deployed to a dangerous environment. Solicitation e-mails also requested their redirecting the survey link (and accompanying consent procedures) to other suitable defense contractors. The initial organization was representative of the many and varied firms and programs that have personnel deployed in dangerous environments. Creswell (2009) points out that randomization such as this allows researchers to generalize a population after studying a representative sample.

Instrumentation/Measures

This investigation used a researcher-developed electronic questionnaire consisting of a 36 question survey. Due to the unique setting many of potential study participants, this type of surveying gave the researcher the best ability to reach out to them. Cooper and Schindler (2008) describe such surveys as easier on participants because they “are easier to read; offer clear response directions; include personalized communication; provide information about the survey via advance notification; and encourage participants to respond” (p. 228). Fowler (2009) adds that like mailed instruments, online surveys can provide time for thoughtful answers, checking records, or consulting with others. Cammann, Fichman, Jenkins, and Klesh (1983), further explain the advantages of using this type of instrument to capture organizational data: “questionnaires provide data in a quantitative or codable form, and often they can do so in a highly standardized, precoded format” (p.73).

In addition to allowing the researcher maximum distribution potential, the use of electronic surveys also permit minimal costs and ease of conversion of collected data into electronic format for data analysis. According to Aiman-Smith and Markham (2004), “by definition, a survey is a systematic process of data collection, intended to quantitatively measure specific aspects of organizational concepts” (p. 12). These authors also mention that survey questions often refer to currently important organizational issues.

An in-house academic field test, as well as a full pretest involving 34 defense contractors, was conducted on the original instrument. Several original field test

participants commented on some of the questions being callous in nature due to the presumption that money was the only reason that such assignments were sought. An additional field test by six individuals with terminal degrees and familiar with the topic was also accomplished on the online version. Participants confirmed the suitability of instrument's questions to the study's research goals, and agreed that overall the questionnaire was effective. Comments were also received that the electronic version of the survey was easy to complete and questions straightforward.

A cover letter clearly stating the purely academic nature of the study accompanied the surveys. This was necessary because the defense contracting industry is inherently secretive, with much information being proprietary. Although confidentiality was stressed, some participants have been apprehensive that their responses could affect their current and future livelihoods. In addition to the normal question precautions such as length and focus, the survey's questions were worded in a fashion that made respondents comfortable in answering. Response options were standard scale choices varying from typical *strongly disagree* to *strongly agree*. The same type of scale chosen for the previously used paper pretest was a five-point Likert scale. This ordinal type of scale is bipolar, with neutrality at the midpoint, disagreement to the left, and agreement to the right. One advantage of this type of question is described by Swanson and Holton (2005): "coefficient alpha reliability with Likert scales has been shown to increase up to the use of five points" (p. 167). This type of scale, however, does have its limitations for exactness. According to Norusis (2007), "there are limitations on what you can say about data values measured on an ordinal scale. You can't say that someone who has a job

satisfaction rating of 1 (very satisfied) is twice as satisfied as someone with a rating of 2 (moderately satisfied)” (p. 81).

The self-administered online survey was created on SurveyMonkey.com, and was approximately 10 pages in length. The 36 question survey queried participants about how important the three targeted factors (family considerations, deployment affect on career advancement, and concerns about danger) are perceived regarding their decision on whether or not to seek a position in a dangerous environment such as Afghanistan or Iraq. Participants were asked a series of questions regarding their perceptions about the importance of the aforementioned considerations when considering a high-paying assignment in a hostile fire location.

Data Collection

Two types of approval were attained before online surveys were sent to prospective research participants. First, a complete Internal Review Board (IRB) application was submitted along with a copy of the proposed online survey. The IRB’s function is to provide oversight and approval of research activities. This oversight helps ensure that research participants are not put at risk. Modifications were made in accordance with IRB directions until the survey met standards necessary for approval. Written permission will also be attained from the principal organization with employees targeted for participation.

Once both approvals were attained, online surveys links were distributed to almost 75 defense contractors from the one targeted organization. These potential

respondents were asked to further forward the survey and its instructions to as many deployed or deployable contractors as possible, regardless of which firm they belong to. It was hoped that close to 150 surveys would be returned to the researcher. This would have vastly exceeded the targeted amount of surveys sought. According to Robson (2002), an adequate number of participants is considered to be five times the amount of variables in a study. Since this investigation was seeking data regarding four considerations, 20 respondents was the minimum participants required. A much larger number was desired though, due to the increased validity gained from participation from more than one organization, and more than one defense contracting project.

All potential participants were e-mailed (either directly, or forwarded) a request for participation message with an informed consent verbiage (electronic), and the survey itself. Participants were given a chance to ask the researcher questions, and asked to complete the consent form and survey within seven days. Reminders were sent after ten days to the original addressees to complete the online surveys. After individual surveys were reviewed for completeness, appreciation e-mails were immediately sent to all addressees. Contributors were thanked for their participation and reminded that evidence of their individual responses would be destroyed after data was consolidated.

Data Analysis

Respondent data was downloaded from SurveyMonkey.com into an Excel spreadsheet. After download, a manual double-check was performed to validate the correct transfer of data. The spreadsheet was then uploaded into the latest version of

SPSS for Windows (v.17) statistical software. The software was appropriately coded to match the data from respondent surveys. After data transfer and ingestion into statistical software, descriptive statistics was run on the data. Means, standard deviation, ranges and t-tests and additional checks including a Cronbach's Alpha reliability test were conducted. The Pearson's r correlation procedure was used during this study because overall, it is a question of relationship between a contractor's desire to deploy, and their perception of multiple considerations. Two-way ANOVA procedures were employed for each hypothesis to determine the relationships between concern for family, perception of experience gain, and worry about injury or death and one's desire to seek an assignment in a high-paying dangerous environment.

Validity and Reliability

Validity

As the desire for this study was to extend the body of knowledge about this unique line of work, it was important that the methodology used was seen as valid. The instrument used during this study had been thoroughly scrutinized. Content validity in an abstract socio-cultural study such as this one seeking the influential factors affecting contractor deployment decisions is highly subjective. According to Cooper and Schindler (2008), "content validity of a measuring instrument is the extent to which it provides adequate coverage of the investigative questions guiding the study" (p. 290). Similar to face validity, having valid content simply means that an instrument has the appropriate questions to help answer the questions under investigation. During this instrument's

construction throughout a graduate-level Survey Research Methods course, student peers and instructor guidance continuously tweaked the original survey so it contained only relevant material. Content validity was also checked during a field test amongst student peers. Minimal adjustments were required since the uncomplicated statements in the survey were clearly linked to each concept, and especially to defense contractors. This type of validity was also checked by responses for five additional survey feedback questions at the end of a pretest for the survey, which involved 34 defense contractors. The responses from actual contractors all indicated that questions/statements were appropriate for their line of work and related to the concepts being explored.

Criterion validity measures how well an instrument's questions relate to each other. This can be done against a known standard, or on original research such as this study-against itself. Here, one seeks to understand if a survey's content scores predict a criterion measure, and if results correlate with other results. According to Cooper and Schindler (2008), this type of authenticity check "reflects the success of measures used for prediction or estimation" (p. 291). Some criterion validity concerns were noticed during the academic pretest for the original instrument. A potential explanation for the wide variety of responses to a minimal amount of concepts is the volatility of the base topic—voluntarily serving in dangerous locations. Perceived guilt about not wanting to volunteer, or the awkwardness of admitting that increased compensation is a large motivator, makes respondent answers on such an instrument suspect. Although confidentiality concerns were addressed in the pretest, this researcher felt that results may not have been totally authentic. The final online version of the survey to be used for this

study stressed the importance of truthful responses and addressed confidentiality concerns.

Construct validity measures how responses line up with the original concepts that were intended to be investigated. Construct validity was evaluated by use of a factor analysis conducted during an earlier academic survey querying these relationships substantiated which questions aligned with each variable. This process grouped like questions by the responses received into a limited number of composites. These factors overall corresponded by the same number of concepts originally sought. The original concepts to be examined in this survey (family considerations, monetary influence, affect on career advancement, and concerns about danger when deployed in hostile locations) were represented well in the results of the original pretest. Although the results indicated that several questions needed rewording or complete abandonment, the original concepts could be identified when conducting the factor analysis.

Reliability

The reliability of the original survey appeared adequate. A Cronbach's Alpha reliability test was run on the pretest responses and results indicated a .750 coefficient. Regarding this internal reliability test, Cooper and Schindler (2008) declare: "this approach to reliability tests the internal consistency or homogeneity among the items" (p. 294). While this outcome was not exceptionally above the normal standard .70 minimum to be considered satisfactorily reliable, this reading does indicate that the population sampled was related. Adjustments were made to the final online survey, and it was

believed that the inclusion of many more defense contractors from multiple programs and organizations would result in increased reliability.

Ethical Considerations

The topics covered by this research can be awkward for some survey participants in this line of work. The importance placed on financial compensation for some individuals, for example, can be embarrassing for many defense contractors. This is especially true during a time of frequent death and injuries for uniformed service personnel (who are compensated at vastly decreased rates). This study's principal researcher-scholar/practitioner, a private sector defense contractor, also set aside his personal views of this industry and those who choose to work in it throughout the investigation. Impartial checks were performed throughout the inquiry by both academic oversight and also professionals from the contracting industry.

Respondents were assured of anonymity throughout this investigation. Individuals were also guaranteed that survey results would not be divulged to any organization which employs participants. The informed consent process was also explained, and participants were informed that their participation was totally voluntary and that they did not have to contribute. Additionally, the security and destruction plan for e-mails and completed survey data was explained.

CHAPTER 4. RESULTS

Overview and Research Objectives

Overview

The purpose of this chapter is to report the findings of this study's investigation of the perceptions of individuals in the defense contracting industry as to which considerations are important when deciding whether or not to pursue and accept an assignment in a hostile environment. This chapter begins with a brief synopsis of the chapter's purpose and research objectives, and then presents the study's findings in accordance with the research methodology described in the previous chapter. In addition to describing initial screening, the instrument items and sample, sections will also cover composite identification and reliability of the instrument. After composites are identified, this investigation's hypotheses are addressed, as well as important demographic trends for this unique workforce.

Research Objectives

The research questions sought during this investigation seek to identify the perceptions defense contractors have about the potential injury or death associated with high income dangerous deployments, as well as perceptions concerning family circumstances and advancement potential after such an assignment. Results were obtained from an online survey administered to actual defense contractors located in the United States, Afghanistan, and Iraq. The survey consisted of several demographic questions and 30 closed-ended Likert items divided into four sections, attempting to measure separate influences on a contractor's desire to pursue and accept a dangerous

deployment. The four sections consisted of Family Influence (FAM; 7 items), Financial Influence (FIN; 7 items), Advancement Potential (ADV; 7 items) and Danger Considerations (DGR; 9 items). The items were numerically coded between 1 (“strongly disagree”) and 5 (“strongly agree”).

Several questions were addressed in this study:

1. Is the increased financial compensation the only or main motivator for civilian defense contractors to seek positions located in hostile environments?
2. How do the factors of increased experience, family considerations, or concern about danger influence civilian defense contractors when pondering deployment to dangerous areas?
3. How influential are each of the considerations for civilian defense contractors when deployed in dangerous locations?

Hypotheses

The following three hypotheses originally guided the structure and analysis of this project:

H1 : There is a significant positive relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor’s perception of possible injury or death during such a deployment.

HO1 : There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor’s perception of possible injury or death during such a deployment.

H2 : There is a significant positive relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of advancement due to supposed experience gained from a hazardous duty deployment.

HO2 : There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of advancement due to the supposed experience gained from a hazardous duty deployment.

H3 : There is a significant positive relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of concerns about family situation.

HO3 : There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of concerns about family situation.

Although these original hypotheses are addressed and resulted reported in this chapter, the general information attained about these unique personnel is potentially more valuable. Demographic information, for example, is captured for the first time and although limited by this particular sample, provides a snapshot of this group's composition and distinctiveness.

Data Screening

Respondent data was downloaded from the online survey site (SurveyMonkey.com) into an Excel spreadsheet. After download, a manual double-check was performed to validate the correct transfer of data. The spreadsheet was then uploaded into SPSS statistical software and appropriately coded to match the data from respondent surveys. Data was screened for quality and an excess of missing responses. Items and cases with an excess of missing responses were removed. Irregular responses were individually inspected and recoded appropriately.

A total of 117 individuals accessed the online survey. Overall, there were 141 missing responses out of a total of 4,212 data points (3.3%) across demographic and survey items. Excluding the demographic items, cases and items were examined for missing data and those with more than 50% of missing responses were removed. This resulted in five cases being eliminated. Four of these had 100% missing items – that is, they did not respond to any of the survey items other than the demographic questions. The remaining case contained 16 missing items (53.3%). Following removal of these cases, there were only five total missing points in the survey data (0.15%). These appeared to be distributed randomly, with no case or item exceeding one missing value. Due to the small amount of missing data, no adjustment was required and the missing values were ignored during analysis.

Additionally, there were eight uncertain responses (0.24%) present in the Likert data in which the respondent selected more than one response value to the item. These responses were replaced by the median value of the respondents' selections. For

example, if the individual selected answers valued at '2' and '3', the respondent was assigned a value of 2.5 for that item. After data transfer and ingestion into statistical software, a number of statistical analyses were conducted to evaluate the project objectives. Analyses were conducted using SPSS v.17. An alpha level of .05 was used as a decision point for statistical significance.

Description of the Sample

Frequency and percentage data were put into a table in order to characterize the sample in terms of age, gender, marital status, prior military experience, and current and past deployment to dangerous locations. The total sample size for data analysis consisted of 112 respondents. The descriptive characteristics of the sample are shown in Table 1.

Table 1
Description of the Sample (N=112)

Factor	Frequency	Percent
Gender		
Male	97	86.6
Female	15	13.4
Marital Status		
Single	28	25.0
Married	72	64.3
Divorced	12	10.7
Prior Military		
Yes	97	86.6
No	15	13.4
Age Range		
20-29	22	19.6
30-39	37	33.0
40-49	36	32.1
50-59	15	13.4
60+	2	1.8

Table 1, *continued*
Description of the Sample (N=112)

Factor	Frequency	Percent
Current Possible Dangerous Assignment		
Yes	97	86.6
No	15	13.4
History of Dangerous Assignment		
Yes	73	65.2
No	39	34.8

There were significantly more male (86.6%) than female (13.4%) respondents. The majority of participants (64.3%) were married, while one quarter (25.0%) were single and 10.7% were divorced. A large proportion (86.6%) had prior military experience. The majority of respondents were in the 30-39 year (33.0%) and 40-49 year (32.1%) age ranges, although there were also a sizeable minority in the 20-29 (19.6%) and 50-59 (13.4%) age brackets. Few respondents were above 60 years of age (1.8%). The majority of respondents (86.6%) reported currently being in a position where an assignment to a dangerous location was probable/possible. In addition, about two thirds of the sample (65.2%) reported a history of dangerous deployments.

Descriptive Analysis of Survey Items

The mean, median, mode, standard deviation, and range of each item were calculated to provide an indication of central tendency and dispersion. The 30 survey items serving as the focus of quantitative analyses were divided into four sections, aiming to measure different possible influences on an individual's decision to pursue a dangerous deployment: Family Influence (FAM – items 7-13), Financial Influence (FIN – items 14-20), Advancement Potential (ADV – items 21-27) and Danger Considerations (DGR –

items 28-36). The descriptive statistics for the survey items comprising each of these sections are reported in Tables 2-5. Because the item responses are at an ordinal measurement level, the mean and standard deviation are supplemented by reporting of the median, mode, minimum, and maximum of the item responses.

“Family Influence” (FAM) Survey Items

The seven items comprising the FAM section are shown in Table 2.

Table 2
Descriptive Statistics of “Family Influence” (FAM) Survey Items

Item	Mean	Median	Mode	SD	Min	Max
7. My family is an important consideration when deciding to accept a position in a hostile environment	4.08	4.00	5	1.156	1	5
8. My motivation to work in a dangerous assignment is my family	3.09	3.00	4	1.205	1	5
9. My family situation is irrelevant in deciding to accept a position in a hostile environment	2.18	2.00	2	1.224	1	5
10. I am completely satisfied that my family will be fine with me working in a dangerous environment	3.34	4.00	4	1.103	1	5
11. There have been times when my family situation kept me from taking a position in a hostile environment	2.76	3.00	2	1.261	1	5
12. My family believes that it is important to my career to accept a hazardous duty assignment	2.96	3.00	3	1.122	1	5
13. My family situation strongly affected my choice of occupation	3.07	3.00	4	1.264	1	5

Note. Responses range from 1 = strongly disagree to 5 = strongly agree.

Questions in the “Family Influence” (FAM) data set in this survey attempt to distinguish the amount of influence a defense contractor’s concern about his or her family situation has upon their decision to pursue and accept a deployment to a hazardous

location. These questions seek to challenge the soundness of the often held presumption that having a family lessens ones desire to deploy on such missions. Conversely, also sought are responses testing the notion that having a family and the associated increased financial responsibility increases the need to pursue the increased compensation connected to these deployments.

Survey results reveal that the medians and modes were at or above neutral for five items, while two items showed disagreement. These items referred to family being irrelevant, or preventing one from taking a position in a hostile environment. Responses indicate family being important to a contactor contemplating a dangerous duty assignment. Full representation of responses across the possible range of values (from 1-5) was seen for all seven items.

“Financial Influence” (FIN) Survey Items

The FIN section included seven items and these are shown in Table 3.

Table 3
Descriptive Statistics of “Financial Influence” (FIN) Survey Items

Item	Mean	Median	Mode	SD	Min	Max
14. Money is my main motivation for accepting a position in a dangerous environment	3.22	3.00	4	1.235	1	5
15. The amount of money strongly influences my assignment choice	3.54	4.00	4	1.207	1	5
16. Pay is irrelevant to me when pursuing assignments I believe will help me advance	2.73	2.00	2	1.022	1	5
17. Past experience working in a hostile environment will lead me to make more money in the future	3.55	4.00	4	1.003	1	5

Table 3, *continued*
Descriptive Statistics of “Financial Influence” (FIN) Survey Items

Item	Mean	Median	Mode	SD	Min	Max
18. Opportunities to make increased compensation for dangerous assignments will only last so long	4.07	4.00	4	.828	2	5
19. Enough money can be earned working in dangerous environment to enable early retirement	3.56	4.00	4	1.038	1	5
20. Too much emphasis is placed on the amount of money that can be made overseas	3.36	3.00	4	1.056	1	5

Note. Responses range from 1 = strongly disagree to 5 = strongly agree.

Questions in the “Financial Influence” (FIN) data set in this survey attempt to measure the degree of importance the increased compensation often associated with hazardous location deployments has on a contractor’s pursuit and acceptance of these jobs. These questions attempt to explore the actual level of influence that exists, versus the often held assumption that this factor is the primary reason responsible for these individuals voluntarily placing themselves in harm’s way.

Survey results show that six of the items had agreement at or above the neutral response. One item (indicating that pay is irrelevant) showed disagreement. Overall, results demonstrate that compensation was a very important factor in considering a dangerous assignment. The full range of responses from 1 to 5 was obtained for six of seven items.

“Advancement Potential” (ADV) Survey Items

The seven ADV section items are reported in Table 4.

Table 4
Descriptive Statistics of “Advancement Potential” (ADV) Survey Items

Item	Mean	Median	Mode	SD	Min	Max
21. Hazardous duty assignments will have a positive impact on my advancement in the defense contracting industry	3.76	4.00	4	.917	1	5
22. The experiences gained from accepting an assignment in a dangerous environment will enable me to advance within my organization	3.66	4.00	4	.973	1	5
23. I feel guilty for not taking a position in a dangerous area	2.41	2.00	2	1.056	1	5
24. Taking a job in a combat area will make me a better defense contractor	3.31	4.00	4	1.147	1	5
25. My organization would appreciate me working in a dangerous area	3.73	4.00	4	.894	2	5
26. It is patriotic to serve in a dangerous environment	3.82	4.00	4	1.092	1	5
27. I can turn down a dangerous assignment without fearing reprisals from my organization	3.41	4.00	4	1.111	1	5

Note. Responses range from 1 = strongly disagree to 5 = strongly agree.

Questions in the Advancement Potential” (ADV) data set in this survey attempt to measure the sample’s belief that a hazardous location deployment will advance one’s career in the defense contracting industry. These questions seek to challenge the accuracy of the presumed importance such a belief has on an individual’s decision to seek dangerous employment. Ultimately, the perceived benefit of placing oneself in a risky location to perform their duties is the main factor tested, since the performance of tasks are equal regardless of location.

Survey results reveal that for six of the items, the medians and modes were at 4, indicating agreement. Respondents did not agree with the statement regarding “feeling

guilty” for not taking a dangerous assignment. Responses ranged from 1 to 5 across six of the seven items.

“Danger Considerations” (DGR) Survey Items

The nine items comprising the DGR section are shown in Table 5.

Table 5
Descriptive Statistics of “Danger Considerations” (DGR) Survey Items

Item	Mean	Median	Mode	SD	Min	Max
28. My fears of dying affect my choice of working in dangerous areas	2.28	2.00	2	1.133	1	5
29. My fears of being maimed affect my choice of working in dangerous areas	2.42	2.00	2	1.183	1	5
30. I would be proud to work in a dangerous area with our armed forces	4.57	5.00	5	.654	1	5
31. Respect from others is earned by working in a dangerous environment	3.41	4.00	4	1.197	1	5
32. Civilians should do more to help our armed forces in dangerous situations	3.79	4.00	4	.931	1	5
33. Serving in a dangerous assignment will prove to others that I am brave	2.40	2.00	3	.972	1	5
34. I have opportunities to volunteer for assignment to dangerous locations	4.02	4.00	4	.809	1	5
35. A dangerous assignment has always been one of my goals	2.68	3.00	3	1.107	1	5
36. My working in a dangerous environment is important to the success of my organization	3.42	4.00	4	1.167	1	5

Note. Responses range from 1 = strongly disagree to 5 = strongly agree.

Questions in the “Danger Considerations” (DGR) data set in this survey attempt to measure the amount of influence a defense contractor’s concern about his or her potential injury or death while deployed has upon their decision to pursue and accept a deployment to a hazardous location. These questions inquire about the supposition that only those with adequate courage seek hazardous duty location assignments. Such a

belief often embraces the idea that only those brave enough to deploy to these locations should advance in this line of work.

This sample's results reveal that statements regarding fears of injury or death show disagreement. Respondents did not tend to agree with statements indicating that a dangerous assignment either prove bravery or has been one of their goals. However, items that indicated working in a dangerous area is a source of pride, respect, and important to success of their organization received more agreement. Full representation of values from 1-5 was seen for all items.

Reliability and the Creation of Composites

General

Principal Components Analyses (PCA), correlation tables, and reliability statistics were calculated for each section of the survey in order to identify a subset of items for the creation of composite scores. Unidimensional and internally consistent composites were desired. PCA indicated the initial dimensionality of the sections, which was supplemented by scale statistics such as Cronbach's Alpha, corrected item-total correlations, and Alpha with item removed. Items exhibiting poor consistency with the primary dimension underlying the section were removed prior to the creation of composites.

Negatively worded items on the survey were identified from the PCA, correlations, and reliability results. Once identified, these negatively-worded items were reverse-coded (i.e., a score of 5 was recoded to a score of 1, etc.) prior to the creation of

composite scores. Composites for each section of the survey were computed by taking the arithmetic mean of the constituent items identified by PCA and reliability analyses. A number of analyses were conducted to assess the reliability and dimensionality of the items comprising each of the sections, to determine their suitability for creating composite scores. The intended outcome was to create unidimensional and internally consistent composites for use in further statistical analyses.

In order to assess dimensionality, PCA with Varimax rotation was conducted on the set of items within a section. All eigenvalues greater than 1 were extracted. If only one component was extracted and the associated eigenvalue was substantially larger than the eigenvalues of the remaining components, this was suggestive of unidimensionality. Inspection of the items that loaded on the various components also gave an indication of the dimensionality of the structure and suggested which items may require removal in reliability analyses. Items that loaded most highly on secondary dimensions were unlikely to be internally consistent with the largest dimension and were thus unlikely to be retained. Examination of the raw inter-item correlation matrix also pointed to which items were related or unrelated.

The PCA was supplemented by reliability analyses. Cronbach's Alpha was used as a measure of reliability. Cronbach's Alpha is calculated from the average inter-item correlations of items and provides an indication of the internal consistency of the items (Cooper & Schindler, 2008). Higher values of Alpha are desired and indicate greater reliability of the composite. Items with poor corrected item-total correlations were removed one at a time until the remaining items showed acceptable internal consistency

for composites. This was defined as an Alpha value greater than 0.7, and no item-total correlations less than 0.3. It is necessary to remove the items one at a time, because the impact of removing one item changes the relationship of the other items with the changing total. The results from the correlation, PCA and reliability analyses also indicated which items were inversely related and required reverse-coding (RC) before creation of the composites.

Composites were created by averaging the raw scores of the retained items. Composites scores for this investigation and its analyses were limited to responses comprising the primary dimension. Multi-dimensionality was present in three of the four sections, but it is likely that the secondary dimensions would show a different pattern of interrelationships. Accordingly, the composites with the most weight were selected to represent each of the four considerations.

Family Influence (FAM)

The inter-item correlations for the Family Influence items are shown in Table 6. Item 9 was negatively related, while items 10 and 12 showed no association to some of the other items.

Table 6
Inter-Item Correlations of all FAM Items

	7	8	9	10	11	12	13
7. My family is an important consideration when deciding to accept a position in a hostile environment	1	.286**	-	.005	.348**	.058	.289**
8. My motivation to work in a dangerous assignment is my family	.286**	1	-	.187*	.174	.069	.333**
9. My family situation is irrelevant in deciding to accept a position in a hostile environment	-	-	1	.268**	-	.011	-
10. I am completely satisfied that my family will be fine with me working in a dangerous environment	.552**	.286**	.268**	1	-.232*	.323**	-
11. There have been times when my family situation kept me from taking a position in a hostile environment	.005	.187*	.444**	-.232*	1	-.210*	.435**
12. My family believes that it is important to my career to accept a hazardous duty assignment	.348**	.174	.011	.323**	-.210*	1	-.125
13. My family situation strongly affected my choice of occupation	.058	.069	.421**	.250**	.435**	-.125	1

Note. * correlation significant at $p < .05$ level (2-tailed), ** correlation significant at $p < .01$ level (2-tailed).

PCA analysis extracted two components with eigenvalues greater than 1, with the first component (35%) being approximately 1.5 times as large as the second (22%). Component 1 was comprised of high positive loadings from items 7, 8, 11, 13 and negatively from item 9. Items 10 and 12 loaded separately on component 2. The initial Alpha coefficient of all items (with 9 reverse coded) was 0.562, although items 10 and 12 had very poor item-total correlations (-.079 and .012, respectively). Items were removed iteratively until an acceptable solution was obtained. This resulted in Items 10 and 12 being removed, and the resulting Alpha was 0.735. Therefore, the FAM composite was

creating by taking the average of five items: items 7, 8, 9 (RC), 11, and 13. The reliability statistics of the final composite items are shown in Table 7.

Table 7
Reliability Statistics for the FAM Final Composite Items, Cronbach's Alpha = 0.735 (5 Items)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
7	12.7410714	12.590	.514	.334	.683
8	13.7366071	13.509	.359	.156	.739
9 RC	13.0044643	11.561	.610	.416	.644
11	14.0669643	12.250	.487	.284	.693
13	13.7544643	11.995	.519	.297	.680

Note. RC = reverse coded.

Financial Influence (FIN)

The inter-item correlations of the Financial Influence items are shown in Table 8. Items 16 and 20 were negatively related. Item 18 was only associated with one other item in the section.

Table 8
Inter-Item Correlations of All FIN Items

	14.	15.	16.	17.	18.	19.	20.
14. Money is my main motivation for accepting a position in a dangerous environment	1	.739**	-	.183	.100	.161	-
			.373**				.448**
15. The amount of money strongly influences my assignment choice	.739**	1	-	.277**	.151	.199*	-
			.414**				.416**
16. Pay is irrelevant to me when pursuing assignments I believe will help me advance	-	-	1	.005	.098	.084	.307**
	.373**	.414**					
17. Past experience working in a hostile environment will lead me to make more money in the future	.183	.277**	.005	1	.203*	.321**	-.103

Table 8, *continued*
Inter-Item Correlations of All FIN Items

	14.	15.	16.	17.	18.	19.	20.
18. Opportunities to make increased compensation for dangerous assignments will only last so long	.100	.151	.098	.203*	1	.027	.075
19. Enough money can be earned working in dangerous environment to enable early retirement	.161	.199*	.084	.321**	.027	1	-.169
20. Too much emphasis is placed on the amount of money that can be made overseas	-	-	.307**	-.103	.075	-.169	1

Note. * correlation significant at $p < .05$ level (2-tailed), ** correlation significant at $p < .01$ level (2-tailed).

The PCA yielded three factors with eigenvalues greater than 1. The first component had an eigenvalue approximately 1.5 times greater than the eigenvalue of the second component and accounted for 33.8% of the rotated variance. Component 1 was comprised of high positive loadings from items 14 and 15, and high negative loadings from items 16 and 20. Items 17 and 19 loaded separately on component 2, while component 3 only contained high loadings from item 18. With items 16 and 20 reverse coded, the initial Alpha of all items was 0.673. However, many items had low reliability parameters as reflected in the small magnitudes of a number of inter-correlations. Item 18 had the lowest item-total correlation (.086). With this item removed, the Alpha coefficient was 0.701; however, both items 17 and 19 also had item-total correlations below 0.3. Removal of item 19, and then item 17, yielded a final Alpha of 0.771 and the remaining four items had item-total correlations above 0.3. Accordingly, the financial influence composite was created by averaging four items: item 14, 15, 16 (RC) and 20 (RC). The reliability statistics are shown in Table 9.

Table 9

Reliability Statistics for the FIN Final Composite Items, Cronbach's Alpha = 0.771 (4 Items)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
14	9.4553571	6.358	.693	.573	.647
15	9.1339286	6.459	.698	.573	.644
16 RC	9.4107143	8.532	.440	.198	.780
20 RC	10.0357143	8.197	.478	.232	.763

Note. RC = reverse coded.

Advancement Potential (ADV)

The inter-item correlations for the Advancement Potential items are shown in Table 10. Items in this section showed large and generally positive intercorrelations, with the exception of item 27 which was negatively related.

Table 10

Inter-Item Correlations of All ADV Items

	21.	22.	23.	24.	25.	26.	27.
21. Hazardous duty assignments will have a positive impact on my advancement in the defense contracting industry	1	.661**	.434**	.587**	.408**	.399**	-.229*
22. The experiences gained from accepting an assignment in a dangerous environment will enable me to advance within my organization	.661**	1	.322**	.540**	.445**	.375**	-.162
23. I feel guilty for not taking a position in a dangerous area	.434**	.322**	1	.381**	.222*	.281**	-.281**
24. Taking a job in a combat area will make me a better defense contractor	.587**	.540**	.381**	1	.454**	.419**	-.243**
25. My organization would appreciate me working in a dangerous area	.408**	.445**	.222*	.454**	1	.376**	-.260**

Table 10, *continued*
Inter-Item Correlations of All ADV Items

	21.	22.	23.	24.	25.	26.	27.
26. It is patriotic to serve in a dangerous environment	.399**	.375**	.281**	.419**	.376**	1	-.191*
27. I can turn down a dangerous assignment without fearing reprisals from my organization	-.229*	-.162	-.281**	-.243**	-.260**	-.191*	1

Note. * correlation significant at $p < .05$ level (2-tailed), ** correlation significant at $p < .01$ level (2-tailed).

In the PCA analysis only one component was extracted with an eigenvalue of 3.3 (47% of variance), which was approximately 4 times greater than the next highest eigenvalue. All items loaded relatively highly on the component, although the loading for item 27 had the smallest magnitude (and was negative). With item 27 reverse-coded, the Alpha was 0.800. However, the item-total correlation for item 27 was only 0.316, and the Alpha was noted to increase quite substantially (to 0.815) with this item removed. Therefore a decision was made to remove item 27. Six items (items 21-26) were retained for creation of the ADV composite. The reliability statistics are shown in Table 11.

Table 11
Reliability Statistics for the ADV Final Composite Items, Cronbach's Alpha = 0.815 (6 Items)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
21	16.94	13.795	.699	.543	.763
22	17.03	13.723	.654	.502	.770
23	18.29	14.783	.439	.230	.817
24	17.35	12.608	.678	.469	.763
25	16.96	15.075	.529	.322	.797
26	16.89	14.063	.506	.269	.804

Danger Considerations

The inter-item correlations for the Danger Considerations section items are shown in Table 12. Items 28 and 29 were noted to be related to one another, but not substantially related to the remaining items in the section.

Table 12
Inter-Item Correlations of All DGR Items

	28	29	30	31	32	33	34	35	36
28. My fears of dying affect my choice of working in dangerous areas	1	.869**	-.043	.037	-.030	.224*	.024	-.165	-.162
29. My fears of being maimed affect my choice of working in dangerous areas	.869**	1	.025	.100	.038	.259**	.011	-.128	-.044
30. I would be proud to work in a dangerous area with our armed forces	-.043	.025	1	.354**	.416**	.089	.289**	.271**	.344**
31. Respect from others is earned by working in a dangerous environment	.037	.100	.354**	1	.400**	.492**	.161	.181	.488**
32. Civilians should do more to help our armed forces in dangerous situations	-.030	.038	.416**	.400**	1	.371**	-.007	.190*	.395**
33. Serving in a dangerous assignment will prove to others that I am brave	.224*	.259**	.089	.492**	.371**	1	.048	.241*	.287**
34. I have opportunities to volunteer for assignment to dangerous locations	.024	.011	.289**	.161	-.007	.048	1	.072	.270**

Table 12, *continued*
Inter-Item Correlations of All DGR Items

	28	29	30	31	32	33	34	35	36
35. A dangerous assignment has always been one of my goals	-	-	.271**	.181	.190*	.241*	.072	1	.330**
36. My working in a dangerous environment is important to the success of my organization	.165	.128	.344**	.488**	.395**	.287**	.270**	.330**	1

Note. * correlation significant at $p < .05$ level (2-tailed), ** correlation significant at $p < .01$ level (2-tailed).

Three components with eigenvalues greater than 1 were extracted in the PCA analysis, with the first two components both representing substantial dimensions (rotated eigenvalues of 2.5 and 2.0). The first component was comprised of high loadings from items 31-33, and item 36, with a moderate loading from item 35. The second component was comprised of very high loadings from items 28 and 29. Item 34 loaded on the third component. Item 30 showed split loadings on components 1 and 3. The initial Cronbach's Alpha with all items included was 0.663; however four of the items had item-total correlations less than 0.3. Items were removed one at a time by the lowest item-total correlation, until the Alpha was over 0.7 and there were no items with item-total correlations less than 0.3. Items 34, 28, and 29 were removed and the final Alpha was 0.735. Item 35 was initially removed following item 34, however based on the PCA results this item was reinstated following removal of items 28 and 29. Accordingly, the DGR composite was created by the average of six items: 30-33, and 35-36. The reliability statistics for the final items are shown in Table 13.

Table 13

Reliability Statistics for the DGR Final Composite Items, Cronbach's Alpha = 0.735 (6 Items)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
30	15.71	13.656	.433	.289	.716
31	16.87	10.310	.576	.422	.665
32	16.49	11.989	.515	.324	.688
33	17.88	12.132	.457	.331	.702
35	17.60	12.315	.339	.171	.739
36	16.86	10.560	.560	.340	.670

Descriptive Analysis of Composite Scores

Composite scores were created by calculating the means of the constituent items identified by principal components and reliability analyses. The mean, standard deviation, and distributional statistics (e.g., skewness) of the composite scores were calculated. The descriptive statistics of the composites are shown in Table 14.

Table 14

Descriptive Statistics of Composite Scores

Statistic	FAM	FIN	ADV	DGR
Mean	3.3652	3.1696	3.4493	3.3802
Median	3.4000	3.2500	3.5000	3.3333
Std. Deviation	.85189	.87329	.72527	.67030
Skewness	-.624	-.353	-.399	-.345
Std. Error of Skewness	.228	.228	.228	.228
Kurtosis	.088	-.335	.410	.642
Std. Error of Kurtosis	.453	.453	.453	.453
Minimum	1.00	1.00	1.33	1.00
Maximum	5.00	4.75	5.00	5.00

Note. FAM = Family Influence, FIN = Financial Influence, ADV = Advancement Potential, DGR = Danger Considerations.

FIN had the lowest mean (3.17) while the ADV composite had the highest mean (3.45). This is surprising considering the presumption by many that high compensation is the main motivator for dangerous deployments. Inspection of the distributional parameters indicated that all composites were slightly negatively skewed (to the right), with this being most prominent for the FAM composite. Kurtosis values were all within acceptable limits.

Differences between Composite Scores

Repeated-measures Analysis of Variance (ANOVA) with the four composites as the within-subjects factor, was conducted to determine whether there were significant differences in the composite means. Composites with significantly higher means indicated greater agreement. Consequently, these analyses were used to reveal whether the respondents rated the financial considerations of deployment to dangerous areas more highly than other factors. The overall analysis indicated a significant main effect, $F(3, 109) = 2.731, p = .047$. Pairwise comparisons of means indicated that FIN was significantly lower than all three other means, whilst the latter did not differ from one another. This result is in direct opposition to the contention that financial influences are the most important consideration when accepting a deployment to a dangerous location.

Relationship Amongst Composite Scores/Hypotheses Testing

Relationships

Pearson product-moment correlation coefficients were computed between the four composite scores. These statistics indicated whether significant relationships existed between concern for family, perception of experience gain and consequential advancement, and worry about injury or death and one's desire to seek an assignment in a high-paying dangerous environment due to financial considerations. The correlation matrix for the composite scores is shown in Table 15.

Table 15
Pearson Correlation Coefficients of Composite Scores

	FAM	FIN	ADV	DGR
FAM	1	.303**	-.091	-.100
FIN	.303**	1	-.022	-.042
ADV	-.091	-.022	1	.689**
DGR	-.100	-.042	.689**	1

Note. FAM = Family Influence, FIN = Financial Influence, ADV = Advancement Potential, DGR = Danger Considerations. ** = Correlation is significant at the 0.01 level (2-tailed).

Hypotheses Testing

The first hypothesis explored the possibility of a significant relationship between the high deployment compensation and perception of possible injury or death. The null hypothesis being tested was:

HO1: There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of possible injury or death during such a deployment.

The results in Table 15 show the Person correlation coefficient value between the FIN and DGR composites were not positively related to one another (-.042). This result

leads to the acceptance of the null hypothesis, and establishes that there is no significant relationship between FIN and DGR in this study.

The second hypothesis explored the possibility of a significant relationship between the high deployment compensation and perception of advancement due to the supposed experience gained from a hazardous duty deployment. The null hypothesis being tested was:

HO2: There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of advancement due to the supposed experience gained from a hazardous duty deployment.

The results in Table 15 show the Person correlation coefficient value between the FIN and ADV composites were not positively related to one another (-.022). This result leads to the acceptance of the null hypothesis, and establishes that there is no significant relationship between FIN and ADV in this study.

The third hypothesis explored the possibility of a significant relationship between the high deployment compensation and perception of family injury or death. The null hypothesis being tested was:

HO3: There is no significant relationship between the increased compensation often associated with hazardous location deployments and a civilian defense contractor's perception of concerns about family situation.

The results in Table 15 show the Person correlation coefficient value between the FIN and FAM composites were positively related to one another (.303). This result leads

to the rejection of the null hypothesis, and establishes that there is a significant relationship between FIN and ADV in this study.

A final observation from relationship testing is an additional positive connection between the ADV and DGR composites. These two categories correlated positively at .689 to one another and shows apparent contractor feeling that dangerous deployment history will increase career advancement.

Multiple Regression Analysis

In this section, the financial influence composite was predicted by the other three composites using multiple regression analysis. The goal was to determine the unique contribution of the importance of family situation, death or injury concern, and advancement potential to the prediction of increased deployment compensation resulting from deployment to a dangerous area. Results are shown in Table 16.

Table 16
Multiple Linear Regression of FIN on FAM, ADV, and DGR Composite Scores

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	2.149	.567		3.791	.000	1.025	3.272			
FAM	.310	.095	.302	3.276	.001	.122	.497	.303	.301	.300
ADV	.031	.152	.026	.204	.839	-.271	.333	-.022	.020	.019
DGR	-.038	.165	-.029	-.229	.819	-.365	.289	-.042	-.022	.021

Note. Dependent Variable: FIN. FAM = Family Influence, FIN = Financial Influence, ADV = Advancement Potential, DGR = Danger Considerations.

Multiple linear regression analyses were conducted to determine whether the FAM, ADV, and DGR composites were significant predictors of FIN scores. FIN was

the dependent variable, and the other three composites were entered as simultaneous predictors. The overall model was significant, $F(3, 108) = 3.649, p = .015, R^2 = .092, \text{Adj. } R^2 = .067$. However, as seen in Table 16, only FAM was a significant independent predictor of FIN scores. This is not surprising given the pattern of zero-order correlations between the composites (Table 15).

Relationship Between Demographics and Composites

Multivariate Analysis of Variance (MANOVA) was used to assess whether the demographic characteristics of respondents (e.g., age, marital status) were related to their perceptions regarding family influence, financial influence, advancement potential, and concerns about death or injury from deployment to a hostile environment. The four composites were entered as the dependent variables. The independent variables consisted of the categorical variables of gender (2 levels), marital status (3 levels), prior military experience (2 levels), current possibility of a dangerous assignment (2 levels) and past history of dangerous deployment (2 levels). For age, the oldest age group (60 years and over) was collapsed with the next highest age range (50-59 years) and age was entered as a continuous variable in order to preserve the ordering of the categories. Due to the complexity resulting from the number of variables in the equation, only main effects were specified in the model. The multivariate effects are shown in Table 17.

Table 17
MANOVA of Demographic Variables on Prediction of Composite Scores

Effect	Wilks' Lambda	F	Hypothesis df	Error df	Sig.	Partial Eta ²
(Intercept)	.145	148.731	4	101	.000	.855
Gender	.976	.632	4	101	.641	.024
Marital Status	.773	3.474	8	202	.001	.121
Prior Military	.956	1.158	4	101	.334	.044
Age Range	.918	2.259	4	101	.068	.082
Current Possible Dangerous Deployment	.972	.716	4	101	.583	.028
History of Dangerous Deployment	.895	2.967	4	101	.023	.105

Marital status was a significant predictor of the linear combination of composite scores ($p = .001$; $\eta^2 = .121$) as was history of a dangerous deployment ($p = .023$; $\eta^2 = .105$). Age narrowly missed the cut off for statistical significance ($p = .068$; $\eta^2 = .082$). Gender, prior military experience, and current possibility of a dangerous deployment were not related to the combination of composite scores. The univariate effects are shown in Table 18.

Table 18

Univariate Effects of Demographic Variables on Prediction of Composite Scores

Source	DV	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta ²
Corrected	FAM	19.360	7	2.766	4.700	.000	.240
Model	FIN	5.474	7	.782	1.027	.417	.065
	ADV	11.261	7	1.609	3.550	.002	.193
	DGR	8.725	7	1.246	3.150	.005	.175
(Intercept)	FAM	120.440	1	120.440	204.690	.000	.663
	FIN	119.660	1	119.660	157.174	.000	.602
	ADV	137.994	1	137.994	304.532	.000	.745
	DGR	106.128	1	106.128	268.243	.000	.721
Gender	FAM	.336	1	.336	.572	.451	.005
	FIN	.022	1	.022	.029	.865	.000
	ADV	.007	1	.007	.015	.903	.000
	DGR	.526	1	.526	1.329	.252	.013
Marital Status	FAM	11.806	2	5.903	10.032	.000	.162
	FIN	.626	2	.313	.411	.664	.008
	ADV	.830	2	.415	.916	.404	.017
	DGR	1.030	2	.515	1.302	.276	.024
Prior Military	FAM	1.763	1	1.763	2.996	.086	.028
	FIN	1.278	1	1.278	1.679	.198	.016
	ADV	.146	1	.146	.321	.572	.003
	DGR	.451	1	.451	1.141	.288	.011
Age Range	FAM	.033	1	.033	.056	.814	.001
	FIN	.055	1	.055	.073	.788	.001
	ADV	3.546	1	3.546	7.825	.006	.070
	DGR	.320	1	.320	.808	.371	.008
Current	FAM	.006	1	.006	.010	.921	.000
Possible	FIN	.162	1	.162	.213	.645	.002
Dangerous	ADV	.892	1	.892	1.967	.164	.019
Deployment	DGR	.934	1	.934	2.361	.127	.022

Table 18, *continued*
Univariate Effects of Demographic Variables on Prediction of Composite Scores

Source	DV	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta ²
History of	FAM	1.885	1	1.885	3.203	.076	.030
Dangerous	FIN	1.443	1	1.443	1.896	.172	.018
Deployment	ADV	3.465	1	3.465	7.647	.007	.068
	DGR	2.114	1	2.114	5.344	.023	.049
(Error)	FAM	61.194	104	.588			
	FIN	79.178	104	.761			
	ADV	47.126	104	.453			
	DGR	41.147	104	.396			

Note. FAM = Family Influence, FIN = Financial Influence, ADV = Advancement Potential, DGR = Danger Considerations, DV = dependent variable. Significant effects are bolded.

The FAM ($p < .001$; $\eta^2 = .240$), ADV ($p = .002$; $\eta^2 = .193$), and DGR ($p = .005$; $\eta^2 = .175$) composites were each significantly predicted by the combination of the demographic variables. The FIN composite was not significantly related to the demographic characteristics of respondents. For marital status, the significant multivariate relationship appeared solely due the effects on the FAM composite ($p = .000$, $\eta^2 = .162$). Perhaps unsurprisingly, post hoc testing indicated that the single respondents had significantly lower FAM composite scores than either the married or divorced respondents. History of dangerous deployment was related to both the ADV ($p = .007$; $\eta^2 = .068$) and the DGR composites ($p = .023$; $\eta^2 = .049$). Respondents who now or previously had been deployed to a dangerous location had higher mean ADV and DGR composite scores than those without history of dangerous deployments. Although the multivariate effect of age did not meet levels of statistical significance, inspection of the univariate tests indicated that the association was driven by the relationship between age

and ADV scores ($p = .006$; $\eta^2 = .070$). Age was negatively related to ADV, with older respondents having lower ADV composite scores.

Summary

The purpose of this chapter was to report the findings of this study's investigation of the perceptions of individuals in the defense contracting industry as to which considerations are important when deciding whether or not to pursue and accept an assignment in a hostile environment. Considerations investigated in relationship to high-paying deployments were concern about injury or death, family situation, and career advancement likelihood. In order to investigate these relationships, the results of an online survey specifically constructed for this study were statistically tested. In addition to investigating the hypotheses regarding the relationships between the three aforementioned factors and highly compensated deployments, general demographic information about private sector defense contractors was sought.

A wide range of statistical tests were performed on the questionnaires dataset. The data was initially screened and assessed for suitability and then ingested into statistical software. Frequency and percentage data were compiled in order to characterize the sample in terms of age, gender, marital status, prior military experience, and current and past deployment to dangerous locations. Descriptive statistics were discussed, as well as results from specific online survey item responses. The creation of composites from the survey was discussed, as well as the resulting reliability results of PCA and Cronbach's Alpha tests. Composite scores were then analyzed, and their

differences and similarities discussed. The relationships between composites were used to test this investigation's hypotheses.

Of the three hypotheses investigated, only one relationship, linking high paying-deployments and concern about one's family situation was corroborated. In contrast to the often held belief that having a family lessens one's desire to deploy to hazardous locations, this sample's responses indicates the opposite. Keeping in mind that the majority of this sample is or was married at some point, this surveys results point to family being an important consideration on whether or not to deploy, and also family being accepting to one's deployment decisions. This quantitative investigation does show that having a family positively relates to deployment decisions. The exact causes for the existence of this relationship, be it increased financial responsibilities or other reasons may be better revealed via a qualitative exploration.

The null hypotheses of the two other relationships explored (high paying deployments with concerns about death or injury, and advancement perception) were both accepted. Although not specially sought, an additional positive relationship between dangerous deployments and the considerations of injury or death and career advancement became evident. This relationship does buttress the notion that "risk equals gain", and that those courageous enough to deploy to these locations should advance in this line of work.

This study's following chapter discusses the findings of this research project. The study's research questions are addressed, as well as what is possibly the most valuable information gathered as a result of this investigation - the accumulation of demographic

and groundwork information on this unique workforce. Implications and recommendations for hiring managers in this industry are also discussed, as well as evident topics for future study.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Discussion

Summary

This purpose of this chapter is to report the results of this study investigating the perceptions of private sector defense contractors when deciding whether or not to pursue and accept an assignment in a hostile environment. This chapter includes the findings from an online survey completed by a sample of defense contractors who routinely have the opportunity to place themselves in harm's way during dangerous deployments. The survey queried individual perceptions regarding several considerations while contemplating such assignments. A discussion of the statistical analysis conducted on the survey responses and hypotheses testing is presented, as well as the investigation's implications and researcher recommendations.

Findings

Research questions. The three research questions that guided this study looked into the amount of influence selected factors (concern about family, concern about injury or death, and belief in advancement likelihood) have on a contractor's desire to seek a high-paying deployment to a dangerous environment such as Afghanistan or Iraq. In addition to querying the perceived importance of these factors, the amount of influence of each concern was sought. Three hypotheses were assembled to test the study's sample as to the amount of importance each of the three considerations had on an individual's decision to seek dangerous employment. In addition to seeking how each consideration

affected the pursuit of such an assignment, relationships were sought between the increased compensation and these factors. The three research questions were:

Q1: Is the increased financial compensation the only or main motivator for civilian defense contractors to seek positions located in hostile environments?

The increased compensation almost always connected with these types of deployments is often considered to be the main reason private sector contractors choose such assignments. This study's results, however, refute this assumption. When compared to concern about subsequent advancement opportunities after a hazardous deployment for example, higher compensation rated lower. Concerns about family also rated more important than compensation when such deployments were contemplated.

Q2: How do the factors of increased experience, family considerations, or concern about danger influence civilian defense contractors when pondering deployment to dangerous areas?

The abovementioned factors were each purposely addressed on the online survey. Although additional factors may be influential when considering these deployments, each of those selected for this study proved significant. Future qualitative studies using open-ended interview questions could potentially uncover multiple additional influential factors.

Q3: How influential are each of the considerations for civilian defense contractors when deployed in dangerous locations?

Although the four factors investigated (compensation, family situation, concern about injury or death, and advancement likelihood) all rated as important, compensation

levels rated the lowest. This is in direct opposition to the widely held belief that it is by far the most important.

Demographic illuminations. The statistical analysis of the results of the online survey provided answers to this investigation's hypotheses, but an examination of the demographic particularities of this sample's respondents importantly reveals interesting details about this distinctive workforce. Although this sample was initiated with participation approval from one defense contracting firm, the snowball method used, with respondents forwarding the survey to other contractors (regardless of firm) provided a wide-ranging group of various workers in this field. It can be reasonably assumed that this sample represents well private sector defense contractors who are able to voluntarily put themselves in harm's way.

Appropriately, all survey participants were in the defense contracting industry, with more than 86% reporting that they were currently in a position where an assignment to a dangerous location was probable or possible. Also very important is the finding that the majority of the sample (almost two thirds) reported that they had at least one previous hazardous duty assignment before. Realizations such as these establish this sample as a very valid representation of this unique workforce. When these respondents who either were deployed during their survey participation or had a previous dangerous assignment were singled out, they as a group had predominantly higher ratings for both confidence in advancement and concern for injury or death. This indicates that these particular individuals believe that they were or will be advanced due to their voluntarily deploying to hazardous areas. Not surprisingly, previous military experience was a factor that most

participants (86.6%) had in common. Reasons for this commonality are twofold: (a) a military background often provides successful dangerous deployment history, and (b) such a background is appealing to hiring managers in this industry. Respondents also did not tend to agree with statements indicating that a dangerous assignment either proves bravery or has been one of their goals. However, items that indicated working in a dangerous area is a source of pride, respect, and important to success of their organization received more agreement.

As might have been presumed, the sample was comprised of significantly more males than females. Although a much smaller group, females still comprised approximately 15 percent of online survey respondents. Interestingly, most of the participants were married. This is unexpected since the types of deployments this study inquires about are normally four months to a year long and often harder for family members to tolerate. The age breakdown covered in the next paragraph may provide a reason for the marriage proportion. Overall, responses indicate family being important to a contactor contemplating a dangerous duty assignment. Only about a quarter of the sample were single.

Age wise, the sample was overwhelmingly between the ages of 30 and 49 years old (65.1%). This speaks to the maturity often needed during these assignments, and possibly also to the time required to obtain the skills and experience needed to gain employment from private sector defense contracting firms, and approval from their government customers. This is another important point that must be included. Private sector firms usually cannot just send whomever they determine is a good fit to fill their

customer's needs; they almost always need to present the prospective employee to their government clients for hiring/deploying approval first. This process often begins with presenting the prospect via their paperwork (resume, history, and references), and frequently followed by personal interviews. Since customers are billed for an employee's travel, extra danger pay, and labor, an inappropriate hire can be extremely expensive for the customer as well as the private sector organization they belong to. This sizable mid-aged majority was bracketed between a 19.6% group between 20-29 years of age, and a 15.2% group beginning at 50 years old and continuing above 60 years of age.

Hypothesis testing. This investigations three hypotheses and study results are:

H1: This hypothesis investigated if there was a connection between the high compensation associated with these deployments and a contractor's concern about possible injury or death. The null hypothesis was accepted, as the results showed no significant relationship between the two factors.

H2: This hypothesis investigated if there was a connection between the high compensation associated with these deployments and a contractor's belief that such an assignment will advance their career. Here too the null hypothesis was accepted, as the results showed no considerable relationship between compensation and career enhancement belief.

H3: This hypothesis investigated if there was a connection between the high compensation associated with these deployments and a contractor's concern about their particular family situation. A significant relationship was established between the two factors and subsequently the null hypothesis was rejected.

Although not specifically tested for, another relationship between composites became apparent. The considerations of fear of injury or death and belief that a dangerous assignment will be beneficial to one's career were shown to be significantly linked. This can be interpreted to show apparent contractor feeling that a dangerous deployment history will increase career advancement.

As previously believed, compensation was shown to be a very important factor in considering a dangerous assignment. While this is unsurprising, this study's exploration of other factors that weigh heavily on a contractor's mind when contemplating a hazardous assignment was very illuminating. Although this initial examination only looked at a small group of additional considerations, all three (concern about family situation, concern about injury or death, and belief that one's career will benefit from such a deployment) rated higher than the abnormally high compensation rate associated with hazardous assignments.

Implications

This study has several implications for academic and private sector audiences. Regardless of industry, the harmful consequences encountered due to making poor candidate selection have been established. But hiring an inappropriate private sector defense contractor to deploy to a hostile-fire zone is especially harmful. Whereas organizations in many lines of work experience unexpected turnover, a deployed civilian contractor's unanticipated failure hurts his or her commercial organization, their government customer, and also themselves. Understanding what underlying perceptions

come into play when private sector candidates consider hazardous duty work may provide recruiters for this line of work assistance in hiring the correct individuals for these unique assignments.

The results of this investigation, especially the demonstrated positive relationships (and lack of relationships) amongst the chosen factors, could be important for private sector recruiting strategies, and also possibly help in the retention of these valuable employees. The more that is known about this unique workforce and their motivations, the better the chances are that costly turnover will be reduced. In addition to the benefits to professions in this industry, academic advantages are also gained. Although ample existing research about contracting workers has been built-up, specific defense industry data regarding these employees is lacking. This study provides a foundation for additional scholarly projects to build upon. Although this initial quantitative study provides several observations regarding several subjectively-chosen factors, there appears to be abundant additional aspects to be explored.

Body of Knowledge

The existing body of knowledge currently has almost no work devoted to this particular work sector. As seen in this study's second chapter, there have been explorations on the idiosyncrasies of contracting in general, but only limited explorations of service-providing defense contractors. A small amount of exploration has also been done on individuals deploying to hazardous environments, but most focused on members of the armed forces. One previous study was located regarding civilians volunteering for such assignments, however it dealt exclusively with Federal employees of the U.S.

Government. These earlier studies did not take in the unique considerations that influence private sector contractors when they consider pursuing a hostile area deployment. This study now provides a glimpse into what is and is not important to these workers regarding deployment, and builds a foundation for more specific future studies.

Future Studies

This investigation's small sample (112 participants) is its main limitation. Added to this drawback is the fact that participants came from only a limited amount of defense contracting programs, home-based principally in one geographic area. Although several private sector firms were represented, the small number of participants came from a restricted number of organizations. Although limited by these weaknesses, this study does provide an as yet known foundation for future research to build upon. This study focused on the researcher-chosen criteria of compensation, advancement potential, family concerns, and apprehension regarding injury or death. The selection of these four factors was purely subjective, and there remain many other considerations that possibly affect a private sector contractor's choice to pursue a hazardous assignment.

Future research can build upon one or more of this study's chosen factors, or investigate completely new ones. Regardless of the exact factors investigated, this study can be used as either a foundation for additional exploration or to buttress subsequent work on defense contracting. Furthermore, although this investigation's focus was on civilian defense contractors and their motivations to deploy to hostile fire zones such as Afghanistan and Iraq, the findings here may also be applicable to future research into other risk associated areas. Examples of these topics include civilian pursuit of

environmentally dangerous assignments such as in arctic or desert regions, offshore drilling jobs, oceangoing deployments, and dangerous law enforcement employment. Also, as this research was recommended by previous academic work regarding specifically Federal civilian assignment desires, this effort's results may now in turn be used to further that field as well. Lastly, this research will also support future academic and organizational efforts regarding civilian members of Nongovernment Organizations (NGO) deploying to dangerous environments.

Private Sector Hiring Measures

This study has business implications as well. Hiring managers in this industry should understand the conclusions revealed in this investigation when searching for individuals to deploy to dangerous areas. Although this study did not result in constructing an instrument to assure perfect hires, its results provide ample information to contemplate while in the selection process. The high compensation often considered as the main reason civilians would volunteer for such assignments, for example, has been shown here to be the lesser of the four considerations this study investigated. Concerns about family circumstances, concern about injury or death, and belief in the probability of career advancement all registered as more important than abnormally high compensation.

Recommendations

Future Studies

This study quantifiably identified several considerations that are important to private sector civilian defense contractors when they are weighing whether or not to

pursue and accept a dangerous location assignment. This study and its research method were designed to build a base for additional research regarding this unique line of work. The factors chosen (compensation, advancement potential, family concerns, and apprehension regarding injury or death) were totally subjective, and there are many additional considerations that could be explored. Additionally, there is much potential in this pursuit for the use of qualitative and/or mixed methods approaches. These alternative methods could utilize interviews with these workers employing open-ended questions that are known to reveal often surprising previously unthought-of issues.

Another recommendation is that regardless of the factors investigated, a larger sample is utilized. Although the target population of this topic is often geographically dispersed around the world, contact via e-mail worked well with this survey and will in the future with similar questionnaires. The snowball sampling used in this investigation was also a big part of its success. While this type of sampling is not normally associated with quantitative research, the unique geographic restrictions encountered here and secretive nature of these workers, made its use most favorable. A larger sample, reached via this means would add increased credibility to future research.

While qualitative face-to-face studies would add much to this line of research, the logistics of such endeavors may be daunting. Although this data collection plan would clearly be the best conceivable, it would necessitate advance Department of State county clearance to enter hazardous duty areas, inter-theater travel that is normally difficult for even high-ranking officials, risk-adverse researchers, and the sponsorship of an already over tasked armed forces. A less problematic means of using a qualitative or mixed

design would be to conduct interviews at locations in the United States with recently returned contractors. The challenge here would be soliciting assistance/backing from the corporate offices of private sector defense contracting organizations so that they would identify and provide access to appropriate personnel.

Private Sector Hiring Measures

The potential gains from successful research about this unique group of workers are many for the numerous commercial sector organizations that provide these types of services to government customers. The negative consequences of bad hires in this profession have been established, and future private sector support for prospective investigations aimed at these employees is warranted. Such support could include not only the previously mentioned identification of, and access to suitable contractors, but also include outright funding and sponsorship. It is doubtful that research backing could be gained from more than one firm for any specific investigation. This profession is lucrative not only for the contractors themselves, but also their parent organizations. While it is common for separate firms to team up to gain certain government contracts, it is doubtful that multiple firms would jointly back research aimed at identifying model employees for dangerous assignments. This is due to the fact that once attained, an experienced and competent employee willing to put him or herself in harm's way is a prized possession for individual firms.

Organizations can build upon the findings of this study to learn more about their current and prospective employees. Although this study targeted contractors regardless of their specific programs, individual firms would be better off studying deployable

workers as groups depending on their specific skills. These workers are often very independent from their organizations, both geographically and socially. Working with unique groups would offer more precise insight into that faction's particularities, and better isolate preferred members of future samples. Further divisions could be made regarding a contractor's job requiring them to routinely "go outside the wire," vs. many who, although they are always in danger of being victims of indirect fire, etc., never actually leave the protection of their Armed Forces customers.

In summary, these recommendations advocate further research into what is and is not important to civilian defense contractors when contemplating assignments to dangerous areas. Insight gained from such research will better ensure that the appropriate individuals are deployed abroad to perform the crucial tasks their government customers require. The definitive achievement of research into what equals a model employee for these unique assignments would be a recruitment template for success. Such a tool could provide human resource recruiters and hiring managers an instrument for selecting the most promising candidates. While no tool guarantees success, an eventual model based off of academic and industry-based investigations could lead to less waste, correct match, and increased competence and effectiveness overseas.

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APPENDIX. SURVEY QUESTIONS

Section I: General and Consent Information

Omitted.

Section II: Demographic Information

Please answer the following questions about yourself:

1. Gender:

- Male
- Female

2. Marital Status:

- Single
- Married
- Divorced

3. Prior Military:

- Yes
- No

4. Age Range:

- 20-29
- 30-39
- 40-49
- 50-59
- 60 or over

5. Are you a civilian defense contractor currently in a position where an assignment to a dangerous location is probable/possible?

- Yes
- No

6. Are you now, or have you ever deployed to a dangerous location as a civilian defense contractor?

- Yes
- No

Section III: Family Influence

7. My family is an important consideration when deciding to accept a position in a hostile environment
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
8. My motivation to work in a dangerous assignment is my family
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
9. My family situation is irrelevant in deciding to accept a position in a hostile environment
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
10. I am completely satisfied that my family will be fine with me working in a dangerous environment
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
11. There have been times when my family situation kept me from taking a position in a hostile environment
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree

12. My family believes that it is important to my career to accept a hazardous duty assignment

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

13. My family situation strongly affected my choice of occupation

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Section IV: Financial Influence

14. Money is my main motivation for accepting a position in a dangerous environment

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

15. The amount of money strongly influences my assignment choice

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

16. Pay is irrelevant to me when pursuing assignments I believe will help me advance

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

17. Past experience working in a hostile environment will lead me to make more money in the future

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

18. Opportunities to make increased compensation for dangerous assignments will only last so long

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

19. Enough money can be earned working in dangerous environment to enable early retirement

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

20. Too much emphasis is placed on the amount of money that can be made overseas

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Section V: Advancement Potential

21. Hazardous duty assignments will have a positive impact on my advancement in the defense contracting industry

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

22. The experiences gained from accepting an assignment in a dangerous environment will enable me to advance within my organization

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

23. I feel guilty for not taking a position in a dangerous area

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

24. Taking a job in a combat area will make me a better defense contractor

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

25. My organization would appreciate me working in a dangerous area

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

26. It is patriotic to serve in a dangerous environment

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

27. I can turn down a dangerous assignment without fearing reprisals from my organization

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Section VI: Danger Considerations

28. My fears of dying affect my choice of working in dangerous areas
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
29. My fears of being maimed affect my choice of working in dangerous areas
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
30. I would be proud to work in a dangerous area with our armed forces
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
31. Respect from others is earned by working in a dangerous environment
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
32. Civilians should do more to help our armed forces in dangerous situations
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
33. Serving in a dangerous assignment will prove to others that I am brave
- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree

34. I have opportunities to volunteer for assignment to dangerous locations

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

35. A dangerous assignment has always been one of my goals

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

36. My working in a dangerous environment is important to the success of my organization

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree