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Perceived Selectivity as a Moderator of Cohesion and Resilience in USAF EOD Operators

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Abstract

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by

Christopher Lee Townsend

MPhil, Walden University, 2020

MS, Columbia Southern University, 2017

BS, University of Maryland University College, 2012

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Industrial and Organizational Psychology

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Abstract

Stress in the workplace, especially for the military, has been a problem for decades. Between workplace stress, prolonged wars, and now a global pandemic, a need has arisen to find ways to ensure that increased stress does not lead to a decrease in mental health that could affect national security. The purpose of the study was to examine perceived selectivity as a moderator of cohesion and resilience in United States Air Force Explosive Ordnance Disposal (USAF EOD) operators. Using a quantitative correlational research design, 311 participants were found using social media to respond to an online survey. The research questions for the study addressed the relationship between dimensions of cohesion and resilience as well as perceived selectivity as a moderator of those relationships. The hypotheses were tested with multiple linear regression and moderation analysis. Overall regression models were significant, specifically perceived selectivity moderated the cohesion, resilience relationship, although the data did fail some statistical assumptions. Implications of this study are two-fold. First, the study could help drive the importance of explaining how selective a team is to EOD commanders. Second, this research can lead to more robust explorations of how the Social Identity Theory may drive the understanding of both cohesion and resilience, looking specifically at social cohesion and selectivity in broader populations, such as comparing different career fields. As the wars end and the military adjusts to living in a global pandemic, stress will continue to increase, and research focused on resilience may help military clinicians and commanders develop ways to inoculate military members against stress's negative health effects leading to positive social change.

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Dedication

This dissertation is dedicated to my family. To my wife, Caroline, who saw me through this entire journey; your love, kindness, and support made this journey possible. To my mother, father, and brothers, without whom I would not be the man I am today. To my nieces and nephew, Kairi, Annie, Kaiden, and Alice, who keep me grounded and sane through all of life's challenges.

Finally, to my Explosive Ordnance Disposal family. Those with us and those without will always be a part of me. We all leave a part of ourselves in war, but for me, I came back with something too, a life of purpose and camaraderie with my EOD family, brothers, and sisters for life. It is through the closeness of the bonds formed through strife that we emerge as an indestructible force.

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support through this has been greatly appreciated. A special thank you to Kairi, Kaiden, Annie, and Alice; you four have kept a smile on my face even in the darkest corners of the world; I hope that you all find and follow your dreams wherever they may take you.

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Chapter 1: Introduction to the Study

According to CNBC's Kerri Renzulli (2019), the most stressful job in the United States is enlisted military personnel. Furthermore, PBS's Judy Woodruff (2018) noted Explosive Ordnance Disposal (EOD) as one of the most stressful and dangerous jobs in the military. The Centers for Disease Control and Prevention (CDC; 2018) has stated that over 70% of adult workers in the United States have reported symptoms of stress. In addition, Park and Jang (2019) discussed job stress as a growing problem within the workplace and is correlated with a myriad of adverse health effects, which the CDC noted, result in billions of dollars spent on healthcare costs. The CDC further stated that the workplace is a primary location to address these issues, and as Park and Jang discussed, more research should be conducted on how to reduce job stress in the workplace.

According to Harvard Medical School (2017), the key to battling stress is resilience. McAndrew et al. (2017) noted a problem in understanding precisely what confers resilience in individuals, especially those in the military. To strengthen military members' resilience, one must understand the processes that drive resilience: it's antecedents and moderators to be specific. As Vanhove and Herian (2015) have discussed, one way to strengthen resilience and mental health is through team cohesion, but what may affect that relationship is still unknown, which is addressed with this study. In this chapter, the overall study, along with its focus, purpose, research questions, and hypotheses, will be outlined.

Background

Over sixty years ago, Festinger (1950) described in his seminal work on the topic that there is a field of forces that act upon groups to form teams known as cohesion. From this work, cohesion has been an actively researched topic driving innovation and change. Initially thought of as a unidimensional force, cohesion has been found to have many facets. Most recently, Beal et al. (2003) and Bayraktar (2017) have shown cohesion to have three main dimensions: task cohesion, social cohesion, and group pride. Each of these dimensions, and cohesion as a whole, are correlated with very impressive outcomes to include performance, job satisfaction, reduced turnover intention, and even lie detecting; but most notably to this study, cohesion is correlated with mental health and resilience (Beal et al., 2003; Black et al., 2019; Guchait et al., 2016; McHaney et al., 2018; Severt & Estrada, 2015; Susskind & Odom-Reed, 2019; Vanhove & Herian, 2015; Walsh et al., 2010). While there have been strides made in the past few decades as to what antecedents may drive the formation of cohesion, Vanhove and Herian have noted that with such a complex construct, more work is needed to understand each antecedent and moderator of cohesion relationships.

The driving concept of mental resilience has its roots in both physiological as well as psychological studies dating back to the 1800s but gained the name resilience as a concept in the 1990s as a panacea for stress and decreased mental health (Tusaie & Dyer, 2004). With wars in Iraq, Afghanistan, and Syria, American military troops faced combat, increasing stress, and decreasing mental health, which all contributed to the military increasing their focus on resilience as a remedy (Kemplin et al., 2019). The

military has sponsored a majority of the longitudinal studies on resilience over the years, all focusing on strengthening resilience in military members that succumb to stress in increasingly violent and dangerous operations around the globe (Van Der Meulen et al., 2020). Even though many studies have been conducted looking at resilience, Georgoulas-Sherry and Kelly (2019) have noted more work must be done to understand this construct.

Both the concepts of resilience and cohesion can be brought together to help understand the social problem of stress in the workplace. Resilience is a way to battle stress and the many adverse health effects that stress brings. There have been numerous studies within the cohesion and the resilience realms of study that focus on trying to understand the concepts better, but it appears more work must be done in understanding each concept, how they interact, and how they can be used to battle workplace stress.

Vanhove and Herian (2015) discussed a positive link between how cohesive a team is and that team's individual well-being, including personal resilience. Also, both Vanhove and Herian and Severt and Estrada (2015) have noted a gap in current research on both the antecedents and moderators of the relationship between cohesion and resilience. This gap drives innovation for untested variables in cohesion and resilience research, notably selectivity. Selectivity is the act of a group being selective in obtaining membership. Kemplin et al. (2019) and Bartone et al. (2008) noted that more resilient people tend to complete rigorous selection processes. Still, no one has yet to look at the other side of selection, which considers how the individual perceives their team as being selective. A person can conduct a rigorous, multiple-hurdle, physical, and mental

selection process but not see their group as selective. At the same time, another individual can simply be placed on a team with no rigorous criteria and yet perceive their team as being highly selective. The perception of selectivity is what was looked at in this study, referenced now as perceived selectivity.

Tajfel and Turner's (1979) Social Identity Theory may hold a previously unresearched key to the relationship between cohesion and resilience through the perceived selectivity of the group. Tajfel and Turner's Social Identity Theory discussed the creation of teams based on similarities to the ingroup and favorable comparison to the outgroup. This theory may help us understand how an individual's perceived team selectivity may strengthen team cohesion by making more substantial comparisons to the outgroup, which may bolster resilience. This study is needed to address this gap in understanding of the mechanisms driving the link between cohesion and resilience in military teams, understand how the perception of team selectivity may strengthen that role, and become a building block for future research on other teams outside of the United States Air Force Explosive Ordnance Disposal (USAF EOD) operator community to develop understandings in how cohesion and resilience are formed in highly selective, elite teams.

Problem statement

Vanhove and Herian (2015) stated that individuals in cohesive teams have stronger mental health to include resilience, but Severt and Estrada (2015) discussed that there are questions as to how and why cohesion can affect specific correlates such as mental health and resilience. Jones et al. (2018), McAndrew et al. (2017), and Zang et al.

(2017) all found positive relationships between cohesion and mental health; however, Vanhove and Herian discussed that future research is needed to look at what may moderate the relationship between cohesion and factors of individual wellbeing such as resilience.

Beal et al. (2003) and Castaño et al. (2013) have documented the link between cohesion and performance, but Severt and Estrada (2015) discussed the need to understand better the relationship between cohesion and other correlates such as individual wellbeing and resilience. Jones et al. (2018) and McAndrew et al. (2017) found that in a military population, cohesion was directly related to individual wellbeing and resilience, but McAndrew et al. specifically discussed the need to conduct similar research with other branches of the military other than the Army, as well as with active-duty members.

Bayraktar (2017), Marlowe et al. (2017), Tseng and Yeh (2013), and Zang et al. (2017) all have asserted that a direction of future research is to look at cohesion through other populations, especially outside of sports contexts. Furthermore, in their seminal work on the Social Identity Theory, Tajfel and Turner (1979) discussed how bonds form through inclusion into an exclusive group based on commonalities and differences in other groups. Tajfel and Turner's work indicates the possibility that the selectivity of a group may strengthen those ingroup bonds but has yet to be studied as a variable in cohesion research.

There are gaps in the current understanding of cohesion and resilience, all of their antecedents, the populations studied, what aspects of cohesion affect mental health, and

how cohesion and mental health are linked. Therefore, the problem that this study attempted to understand is the perceived selectivity-cohesion-resilience relationship as Vanhove and Herian (2015) discuss, to ascertain what antecedents of cohesion, such as perceived selectivity, may strengthen the cohesion-resilience relationship to address the social problem of workplace stress in a population such as USAF EOD teams. In this study, I endeavored to address the larger gap in team cohesion research by attempting to identify a previously unstudied variable, explicitly focusing on the relationship between team selectivity, cohesion, and resilience in a highly selective, elite, military community.

Purpose

The purpose of this dissertation study was to gather data to test the hypothesis that perceived selectivity would moderate the relationship between cohesion and resilience in USAF EOD operators. A quantitative approach was used to determine the extent to which perceived team selectivity moderated the relationship between team cohesion and resilience. The study's predictor variable was team cohesion, as measured by the Group Environment Questionnaire-Work Team Version. This study's outcome variable was the USAF EOD operator's individual resilience, measured by the Connor-Davidson Resilience Scale (CD-RISC). Finally, the moderator variable was team selectivity, as measured by a modified version of the Hiring Selectivity Scale (HSS). As indicated by Vanhove and Herian (2015), more research needs to be conducted on the antecedents and moderators of the relationship between cohesion and resilience. Therefore, this study aimed to determine if perceived team selectivity moderated the relationship between team cohesion and resilience in elite USAF EOD teams.

Research Question and Hypotheses

RQ1: Does perceived team cohesion level predict individual resilience among USAF EOD Operators?

H_o1: Perceived team cohesion level does not predict individual resilience among USAF EOD Operators.

H_a1: Perceived team cohesion level predicts individual resilience among USAF EOD Operators.

RQ2: Does perceived team selectivity moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators?

H_o2: Perceived team selectivity does not moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

H_a2: Perceived team selectivity moderates the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

Framework

The theoretical framework that was used for this study is Tajfel and Turner's (1979) Social Identity Theory. Tajfel and Turner's theory is that groups are formed through three phases of social categorization, identification, and comparison. As Brown (2020) discussed, the Social Identity Theory is still widely used today and continues to apply to current team research (Barrick & Parks-Leduc, 2019; Bell & Brown, 2015; DiRosa et al., 2015; Luciano et al., 2018; Rapp & Mathieu, 2019). The foundation of the Social Identity Theory is that one joins groups that they have commonalities with, and then the group becomes a part of their social identity, binding the individuals together

through their shared interests (Brown, 2020). These processes create an ingroup and comparison groups or outgroups, which generate conflict by comparing themselves (Tajfel & Turner, 1979). While Tajfel and Turner discuss these processes involved in forming groups, they also discuss how they create the forces that bind the groups. Tajfel and Turner note that along with the cohesive forces of identity connecting the ingroup, the comparison to other groups also acts as a cohesion agent for the ingroup. Thus, the more prestigious or selective a group is, the more people want to be a part of the group both in number and desire, so the more cohesive they should be. Finally, as discussed by McAndrew et al. (2017), stronger social identification with a prestigious group will also lead to higher communication levels, a lack of avoidant coping, and resilience.

Nature of the Study

The study encompassed a quantitative, non-experimental correlational design. The survey method was used to measure each of the three target variables of perceived cohesion, perceived team selectivity, and resilience in a cross-sectional survey of USAF EOD Operators. The target population for this study was USAF EOD Operators. As Bayraktar (2017), Marlowe et al. (2017), and Tseng and Yeh (2013) have noted, there is a need for cohesion research to continue to obtain data from areas outside of the sports context. As discussed by Bartone et al. (2008) and Gucciardi et al. (2020), individuals with higher levels of initial resilience are generally selected into elite military teams. To focus on the proposed moderation effect of resilience derived from one's perception of their team's selectivity, it would be necessary then to conduct research specifically within one of these elite careers to account for these team's higher resilience levels. Therefore,

this study's target population was Active Duty, Guard, and Reserve EOD Operators in the United States Air Force. The study's eligibility characteristics were U.S. Air Force EOD Operators, in good standing, who have graduated from Navy School EOD and are members of the Air Force Active Duty, Guard, or Reserve corps.

Definitions

The terms that need operational definitions for this study are the three primary variables of team cohesion, selectivity, and resilience. First, while there are many definitions of cohesion (Bayraktar, 2017), for this study, the predictor variable of team cohesion was defined as psychological bonds that form between members of a team (Severt & Estrada, 2015), or more simply as the glue that holds teams together (Bayraktar, 2017). The moderator variable of team selectivity was defined by the scale created by Trank et al. (2002) as limiting the acceptance into the group through procedure, education, skill, and abilities. The outcome variable of resilience was defined by Connor and Davidson (2003) as one's psychological ability to cope with stress or bounce back after trauma. Finally, USAF EOD operators are the bomb squad of the Air Force; their primary mission is to locate, make safe, and dispose of explosive hazards including conventional munitions as well as aircraft, chemical, biological, radiological, nuclear, and improvised explosive devices.

Assumptions

The primary assumptions of this study were due to the use of an online survey medium to collect data. Two assumptions are made when using an online survey to collect data. First, I assumed that the participants in the study met the criteria to

participate. While there were specific criteria to participate, and the participant needed to answer the requirements questions favorably to have their data counted, participants can be untruthful. Furthermore, it was assumed that the participants were truthful in their answers to the survey questions. Also, as Kemplin et al. (2019) and Bartone et al. (2008) have discussed, those that already have a high level of resilience will pass through selection into highly selective teams such as special forces. While the USAF EOD career field is not special forces, it does have similarly rigorous selection standards that make it a highly selective career field; therefore, it was assumed that EOD, being a highly selective group, will already have a high level of resilience, which is why the group was not compared to other, less selective groups as a control measure. Each of these assumptions must be made to conduct an online survey study, but a strict review of participation criteria questions helped mitigate the problems that could have arisen from these assumptions.

Scope and Delimitations

The use of a highly selective population as a focus of this study was by design. As Kemplin et al. (2019) and Bartone et al. (2008) noted, those that pass through a rigorous selection process to become part of highly selective teams tend to be those that are already reasonably resilient. To focus on merely the perception of selectivity rather than the attraction of these selective fields to resilient people, I used a single population of one highly selective career field, in this case, USAF EOD operators. Due to the specific nature of the population, the results from this study will unlikely be generalizable

to broader populations such as the military as a whole, but the results of the study may allow for future research into broader populations.

Limitations

It would be out of this study's scope to determine all antecedents and correlates of both cohesion and resilience. This study focused specifically on how perceived team selectivity is related to the two other variables of cohesion and resilience. Therefore, there is a limitation within the study that there could be confounding variables influencing the relationships being studied that may be unaccounted for. Furthermore, the implication of causation nor order was a limitation in the study as the study was not a controlled experiment and was cross-sectional rather than longitudinal. Designing an experiment or adding a longitudinal aspect would have introduced the need for more resources beyond the scope of the study; however, the resources needed for an experiment or longitudinal study could be justified with this study's results. Finally, I am a USAF EOD operator, which may prompt bias. To mitigate the bias, I collected data while not serving in the Armed Forces and used an online survey medium to collect data, so I was not present when participants were filling out their surveys.

Significance

This research project was unique through several different facets that build upon theory and findings in the current literature. First, the variable of team selectivity is novel. However, selectivity is rooted in Tajfel and Turner's (1979) Social Identity Theory, a theory that is still used in current team research (Barrick & Parks-Leduc, 2019; Bell & Brown, 2015; DiRosa et al., 2015; Luciano et al., 2018; Rapp & Mathieu, 2019).

Second, the study was not focused solely on the sports context, a problem that was noted by Bayraktar (2017) in current cohesion research, but rather a previously unresearched population within the military of highly elite Bomb Squad Operators which could act as a bridge between elite athletes and the industrial organization. Furthermore, the study addressed all of the related variables combined, looking at perceived selectivity to team cohesion and resilience, which opened up the possibility of studying team selectivity as a moderator variable. Finally, the study attempted to address generalizability issues by recruiting a sample from a bridge population between the sports and organizational context.

The findings from the study built upon the continually growing area of team cohesion research. As more studies are conducted, researchers can better understand what variables build cohesive and resilient teams. A formerly unstudied antecedent to team cohesion was addressed in the study, and how the two variables of cohesion and perceived selectivity are related to resilience were also looked at. This research helped build on the current understanding of team cohesion, which may eventually be used to educate leaders on how to increase the perception of selectivity in their teams to promote increased resilience and reduced work stress.

Summary

Work stress is an epidemic that has plagued both the civilian and military world for quite some time. The military has had to deal with multiple conflicts and increased combat engagements that take a toll on the service members' mental health through increased stress. The military is ever-increasing its efforts to build resilience to combat

this growing problem of stress. This study attempted to further our understanding of how resilience can be strengthened by understanding the possible links between the perceived selectivity of a team and team cohesion.

Chapter 2 will outline and analyze the current and seminal literature that is relevant to building the study. Each of the three primary variables will be further explored, described, and analyzed with the current research on each topic and how previous literature has connected them. The chapter will also include a current analysis of the Social Identity Theory and how it applies to the study.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative study was to explore the relationships between team cohesion, perceived team selectivity, and resiliency. Chapter 2 will focus on the current scholarly literature that explains the concepts of cohesion, selectivity, and resilience, both in definition and development. Furthermore, the application of these concepts to the military population will be explained. The chapter begins with the development and relevance of the Social Identity Theory as the study's backbone. The concept of cohesion, dimensionality, and the current focus on studying varied populations are then explained. The development of the multidimensionality of cohesion will emerge the drive for understanding the antecedents of cohesion, such as selectivity, to understand the outcomes, such as resilience. Finally, the development of resilience will be described, along with the prevalence of the variable in military research.

Literature Search Strategy

Various search strategies were enlisted to find the necessary current and seminal works to build the study. Information was sourced through Walden University Library and Google Scholar services. The databases that were used from the Walden University Library to complete the literature search on the topic of Team Cohesion, Perceived Selectivity, Resilience, and Social Identity Theory were the ABI/INFORM Collection, Business Source Complete, Emerald Insight, SAGE Journals, PsycINFO, Academic Search Complete, and Taylor and Francis Online. These databases were scoured to find the most pertinent information available on the primary topics and theory. The keywords

that were used to search within each of the databases mentioned above were Cohesion, Team Cohesion, Group Cohesion, Resilience, Hardiness, Meta-Analysis, Literature Review, Selectivity, Selective, Prestige, Exclusivity, and Elite. Along with the keywords, the results were limited to full-text, peer-reviewed articles that were published in 2015 or later, with searches of older publications reviewed to find seminal works. As prominent authors in the field were found, or specific articles were cited in the reading, searches were conducted specifically for those authors and articles as well. Furthermore, Google Scholar was used to search through the variable topics to add a facet to the knowledge gained and ensure a thorough analysis of current literature was conducted, focusing on current studies and finding seminal works.

Theoretical Foundation

Social Identity Theory

The theoretical framework that was used for this study is Tajfel and Turner's (1979) Social Identity Theory. As Brown (2020) discussed, the Social Identity Theory is still widely used today and continues to apply to current team research (Barrick & Parks-Leduc, 2019; Bell & Brown, 2015; DiRosa et al., 2015; Luciano et al., 2018; Rapp & Mathieu, 2019). The Social Identity Theory asserts that people tend to form groups based on factors they have in common and that groups are formed through three phases: social categorization, identification, and comparison (Tajfel & Turner, 1979). The Social Identity Theory foundation is that one joins groups or teams that they have commonalities with, the group identity is internalized and becomes a part of the person's social identity and binds the individuals together through their common interests and

comparison to other teams (Brown, 2020). Each of the Social Identity Theory components, from categorization through to identity development through to group or team comparison, is vital to the understanding of how selection may affect cohesion and resilience.

Categorization

Tajfel and Turner (1979) defined two distinct types of human social behavior: interpersonal and intergroup. Interpersonal behavior is motivated specifically through one's characteristics, while intergroup behavior is motivated only through one's membership in their social groups. While these are two distinct behaviors of people Tajfel and Turner asserted that neither one could fully be established in the physical world, one acts from motivations from both their characteristics and their memberships to different groups. It is the molding of these two behaviors where one finds the initial stage of developing a social identity through the team, which is categorization (Tajfel & Turner, 1979). Brown (2020) defined categorization as being classified into a group through similarity or selection and then internalizing the group's ideals into one's identification. Identification is internalizing the group identity into the individual's identity and is the second phase of the Social Identity Theory (Tajfel & Turner, 1979).

Identification

After categorization, individuals are selected into their group based on their commonalities and view their group positively, which acts as a bonding agent between the individuals within the team (Tajfel & Turner, 1979). This bonding or force that binds the group together is what Festinger (1950) described as team cohesion. The groups or

teams that are formed through commonality are then known as ingroups. As Brown (2020) described, individuals in groups desire to see themselves positively and search for this positive distinction when they interact with and compare themselves to other groups, which is the final phase of the Social Identity Theory.

Comparison

One critical aspect of the ingroup/outgroup behaviors that Tajfel and Turner (1979) discussed is comparison and competition. Tajfel and Turner noted that groups compare themselves to other groups, which affects the level of prestige they feel through their social identity; positive comparisons give high prestige, and negative comparisons elicit low prestige. It is through this intergroup conflict that intragroup behaviors emerge, such as morale and cohesiveness supporting an individual's identification with and attachment to the group (Tajfel & Turner, 1979). According to Tajfel and Turner (1979), the comparison groups must be seen as a relevant comparison to the ingroup, though, either through a situation, proximity, or similarity. The cohesion then in the ingroup is strengthened by their superior comparison to their peer group, which could be strengthened through individuals' perceived selectivity to the ingroup. The feeling of exclusivity from being selected over those in the outgroup possibly gives the members of the ingroup a feeling of being elite that may strengthen their cohesive bonds. In this study, the relevant comparison groups were the rest of the military, especially those military occupations that do not have a rigorous selection process as do EOD Operators or Special Forces.

Social Identity Theory and Cohesion

Tajfel and Turner (1979) discussed the processes involved in creating and sustaining groups; they also discussed how these processes create the forces that bind the groups. Festinger (1950) discussed this line of thinking, defining cohesion as a series of forces acting upon the group that keeps the individual members together. Tajfel and Turner noted that along with the cohesive forces of identity connecting the ingroup, the comparison to other groups also acts as a cohesion agent. Thus, the more prestigious or selective a group is, the more people want to be a part of the group both in number and desire, so the more cohesive they are (Festinger, 1950). As Brown (2020) discussed, this intergroup behavior phenomenon is based on the assumption that people tend to see themselves in a positive light and garners this force of cohesion amongst them, especially when they are viewed as superior to their comparison teams. It is through these cohesion forces that act on the ingroup that Brown noted the Social Identity Theory moved on from not simply explaining intergroup behavior, but intragroup behavior as well.

Rapp and Mathieu (2019) discussed using the Social Identity Theory to understand cohesion through teams and multigroup behavior, or the behavior between teams. Rapp and Mathieu asserted that the intermixing of an individual within multiple teams, such as being a part of the marketing department and then a specific marketing team, drove the development of one's identity. Rapp and Mathieu noted that there had been a lack of focus on the perceptions of individual team members and their outcomes as part of work teams rather than team-level outcomes. Furthermore, Rapp and Mathieu found that the prestige of a project that one was working on is highly correlated to the

team's level of cohesion. The possible link between project prestige and cohesion may show that prestige that could be found as part of a selective team may also drive cohesion.

Social Identity Theory and Resilience

Even though the Social Identity Theory is traditionally a social psychology theory, it has significant implications outside of that field, specifically with organizational research (Brown, 2020). A significant development in Social Identity Theory over the years has been the application of it to health and wellbeing, mainly how groups help foster resilience (Brown, 2020; Drury et al., 2016). Through the positive comparison to an outgroup of a superior ingroup, an increase in an individual's well-being will be prompted (Brown, 2020). Hogg et al. (2017) also discussed overall health and harmony arising from a balance between fulfilling a need for inclusion and being a part of the ingroup, while also having positive comparisons with an outgroup. Inoue (2015) found another correlation between well-being and identity, discovering that those with a strong group identity had higher levels of social support through community cohesion. However, more research is needed to understand how team membership and cohesion can foster such curative properties in an individual's mental health, such as resilience. Brown noted that it was the original aspect of the individual searching for distinctiveness through their group to promote positive self-esteem that prompts this application of Tajfel and Turner's (1979) theory to the mental health and resilience fields.

Cohesion

As Festinger (1950) described in his seminal work, cohesion is an accumulation of forces acting on individuals to remain in a team. This force is applied through multiple mechanisms and is generally viewed as multidimensional, although some have studied it as a unidimensional concept (Bayraktar, 2017). The concept of cohesion is generally split into task and social dimensions, but this also has been a somewhat contested view of the concept, with researchers finding more than two dimensions or researching cohesion unidimensional (Bayraktar, 2017; Severt & Estrada, 2015; Von Treuer et al., 2018). Furthermore, many researchers have looked into many outcomes for teams that have cohesion to include performance, job satisfaction, and resilience. Finally, while research has been conducted to find the outcomes of cohesion, much has been done on the antecedents of cohesion as well.

Dimensionality

Cohesion research has had a long and comprehensive history of looking at the link between cohesion and its most studied outcome, performance (Beal et al., 2003). Severt and Estrada (2015), however, have noted the lack of research as well as a clear understanding of cohesion's structure and function. One of the contested concepts referenced by Severt and Estrada, and Bayraktar (2017) is the dimensionality of cohesion. There are some agreements in the literature between some of the more specific dimensions of cohesion (Bayraktar, 2017), but most agree on the multidimensionality of the concept as well as a Task and Social dimension (Carron & Brawley, 2000). Bayraktar and Von Treuer et al. (2018) found that there were about five different

dimensions of cohesion through a qualitative study. Both Bayraktar and Von Treuer et al. found somewhat different results in their latest attempt at understanding the dimensionality of cohesion, although each of their dimensions can be associated with the Social or Task labels. While Bayraktar and Von Treuer et al. have found mixed results, the meta-analysis conducted by Castaño et al. (2013) reaffirmed the dimensions of Task and Social Cohesion as the most generally agreed upon and are most frequently used dimensions in the literature, as Severt and Estrada also discuss; therefore, they were the primary dimensions of concern for this study.

It is evident in the literature that even when cohesion is viewed as a multidimensional concept, it is still being researched based on only one of the agreed subdimensions. For example, Kim (2016) found that positive trait affect increased task cohesion in a sample of 66 work teams, but failed to look at whether positive trait affect effected social cohesion. Kim discussed the differences in dimension and used the Group Environment Questionnaire (GEQ), which has a social cohesion subscale, but did not collect any data on the other dimensions of cohesion to understand whether positive trait affects and autonomy influenced social cohesion. A final example would be Black et al. (2019), who conducted a study with student work teams on cohesion but failed to discuss the dimensionality of cohesion at all. It is crucial when studying cohesion not only to discuss the most agreed upon dimensionality of the construct, as will be done in the next few sections, but also to conduct the research and give the results of a study based on the dimensions of cohesion as discussed by Severt and Estrada (2015) and Casey-Campbell and Martens (2009).

Task Cohesion

Task cohesion is formed within the team as a shared desire to effectively complete its shared goal (Severt & Estrada, 2015). Task cohesion has had strong results as the dimension of cohesion is most strongly related to performance (Mathieu et al., 2019). Mathieu et al. (2019) found a higher correlation of task cohesion to team performance (p=.30) in their meta-analytic study, much higher than the correlation of general cohesion and performance (p=.21); Castaño et al. (2013) found similar results, showing that in some instances the different dimensions of cohesion can influence different outcomes. As Courtright et al. (2017) noted, task cohesion is focused mostly on goal pursuit and goal attainment, which logically makes sense why task cohesion is generally linked with performance and team effectiveness. Task Cohesion is not only linked to performance and team effectiveness, while it is more strongly linked to performance characteristics, but some research has also linked cohesion to other outcomes, to include mental health, or at the very least the dimensions of cohesion were not expressly divided to find whether each dimension of cohesion had different correlations to specific outcomes.

Cohesion research, as mentioned earlier, has a problem with consistency in dimensionality. Because of this problem, there are possibilities where task cohesion could be more strongly linked with outcomes outside of the realm of performance or effectiveness. In the study conducted by Urien et al. (2017), they viewed cohesion as a two-dimensional concept and found both Task and Social cohesion to be significantly and independently correlated to job satisfaction. Alternatively, Zang et al. (2017) found a

link between social cohesion and mental health but left out task cohesion and did not explain it missing from the research or why a more comprehensive view of cohesion was not studied, even given the fact that the greater research community sees cohesion as multidimensional (Beal et al., 2003; Castaño et al., 2013; Festinger, 1950; Severt & Estrada, 2015). If we are to understand how mental health outcomes are tied to cohesion, we must view cohesion cohesively and look at each dimension independently and as a whole to understand this phenomenon.

Social Cohesion

Festinger (1950) discussed social cohesion as being the attraction one has to the group that they have become a part of, essentially whether or not the individuals like each other as discussed by McLeod and Von Treuer (2013), or the social bonds formed between team members as discussed by Severt and Estrada (2015). As one would surmise, this dimension of cohesion has been linked more often to mental health outcomes over performance outcomes such as positive affect, satisfaction, happiness, and other types of subjective well-being (Vanhove & Herian, 2015). As an example, Zang et al. (2017) found cohesion to be correlated, along with other measures of personal resources, with positive mental health outcomes. Zang et al. found within a sample of military members experiencing PTSD symptoms that the variable of personal resources, which includes unit social cohesion, reduces negative post-traumatic cognitions, which lowers PTSD severity. Furthermore, Griffith (2015) found unit cohesion, specifically in the social dimension, to reduce suicidal thoughts after combat exposure in a group of 4,567 soldiers returning from war. Unfortunately, as discussed by Griffith, the study did

focus primarily on social cohesion and should have incorporated a more comprehensive operational definition of cohesion to include task cohesion to have more complete results.

Cohesion Antecedents

Just as there is a myriad of outcomes from cohesion, many variables act as antecedents to the phenomena. First, as Tajfel and Turner (1979) discussed, the increase of prestige or possibly selectivity of the group may influence cohesion, which was looked at in this study. Kim (2016) found that autonomy played a mediating role in the link of positive affect and task cohesion in a sample of 66 work teams in South Korea. Kim discussed the differences in dimension and used the GEQ, which has a social cohesion subscale but did not collect any data on the other dimensions of cohesion to understand whether positive trait affects and autonomy influenced social cohesion. In addition, Black et al. (2019) found self-efficacy and emotional intelligence to precede and positively influence cohesion in a longitudinal study of 35 student business teams, measuring cohesion as a unidimensional concept. Furthermore, Bandura et al. (2019) linked authentic leadership as an antecedent to task cohesion in a study of 338 athletes. Another antecedent of cohesion is how many connections one makes within the group. Susskind and Odom-Reed (2019) found, through self-reporting, that 52 members within 12 university project teams exhibited higher cohesion when they had less degree centrality within an alliance, meaning fewer connections to the alliance meant deeper communications within teams and higher cohesion.

One commonality between all of these antecedent studies was that they focused specifically on one type of cohesion, or cohesion as a unidimensional concept. Some of

the researchers admittedly studied a specific dimension of cohesion but did not measure cohesion through the lens of multidimensionality or give data to show whether one dimension or another was significant. All of the researchers consistently go against the cohesion framework discussed by Severt and Estrada (2015) as well as Festinger (1950) in that cohesion is a multidimensional construct and should be studied as such, a problem that was addressed in this study.

Cohesion Outcomes

In Festinger's (1950) seminal work on cohesion, he discussed one of the outcomes of cohesion as having a higher level of similarity in highly cohesive groups' attitudes and behavior. This alignment of attitudes and behavior that Festinger discussed can be seen as a foundation for the many outcomes of cohesion that have been found to date. Among all of the outcomes linked to cohesion, performance is by far the most researched (Beal et al., 2003; Black et al., 2019; Severt & Estrada, 2015; Susskind & Odom-Reed, 2019; Vanhove & Herian, 2015). Performance is not the only benefit of cohesion, though. Cohesion has also been linked to an increase in job satisfaction (Walsh et al., 2010), a decrease in turnover intention (Guchait et al., 2016), learning (Lott & Lott, 1966) even the detection of deception (McHaney et al., 2018). Another set of outcomes that has garnered research beyond performance is within the field of individual psychology. Vanhove and Herian (2015) noted that while there has been abundant research into the cohesion performance relationship, there has been little research into the link between cohesion and individual well-being.

Vanhove and Herian (2015) and Chan (2019) discussed the lack of research into cohesion and individual wellbeing, but that does not mean there has been no research into the topic. Layman et al. (2019) studied the topic of both intimate partner and military unit cohesion as it relates to resilience. They found within a sample of 273 active-duty military members that increased cohesion within their unit was correlated with positive wellbeing, although they did not measure cohesion dimensions independently, use a robust cohesion measurement, nor specifically test resiliency only overall wellbeing (Layman et al., 2019). Furthermore, Choi et al. (2019) found similar results to well-being in a sample of 3,079 soldiers returning from a combat deployment. After measuring genetic susceptibility to major depression disorder, Choi et al. found that even soldiers highest at risk for a depressive episode were less likely to have one when they reported high levels of unit cohesion, but again this measurement of cohesion was not broken down into multiple dimensions, and while they measure and analyze resilience it is as a separate variable and not a variable linked to cohesion. Cohesion is linked with individual wellbeing, as Vanhove and Herian (2015) initially discussed, but there is room for additional research. Primarily future research should be focused on linking cohesion with specific aspects of individual wellbeing such as resilience, cohesion research needs to break down the individual dimensions of cohesion, and finally, the antecedent of selectivity should be looked at to provide a better picture of how the Social Identity Theory can further the understanding of the cohesion concept.

Resilience in the Military

Resilience has had many definitions over the years, but the core definition of the concept is rather stable as the ability for one to bounce back or cope significantly with adversity and stress and is sometimes referred to as hardiness (Kemplin et al., 2019; 1993; Tusaie & Dyer, 2004). As discussed by Tusaie and Dyer (2004), resilience began through both physiological studies of homeostasis in the 1920s and Psychological studies of unconscious defense mechanisms from the 1800s. Both schools of thought began to overlap in the ‘50s and ‘60s through emotional stress and coping as well as in the ‘70s and ‘80s through brain plasticity and protective mental health factors (Tusaie & Dyer, 2004). The concept evolved into what it is today through psychoneuroimmunology in the 1980s and, finally, resilience as a concept in the 1990s (Tusaie & Dyer, 2004). With the surge of troops deployed over the recent past to the war on terror in Iraq, Afghanistan, and Syria, and the resulting surge of stress-induced mental health issues, the United States Military has focused on resilience to help ensure the protection of their most valuable assets (Bryan et al., 2015).

History

The United States military has taken an aggressive approach to resilience in recent years, focusing on resilience as a panacea for many mental health ailments that come with stress and combat exposure (Kemplin et al., 2019). The entirety of the military has some focus on resilience, and it comes in many names as the concept has evolved. Whether it is called hardiness training, military family readiness, or the U.S. Army’s current program Ready and Resilient, the whole of the military has a focus on being and

becoming resilient (Army Resilience Directorate, n.d.). For the Air Force, resilience training and programs have evolved over the years to become what is known as Integrated Readiness through Comprehensive Airmen Fitness and Task Force True North, a comprehensive program to ensure the growth and resilience of the members of the Air Force, under the direction of the Department of the Air Force Integrated Resilience Directorate (Air Force Resilience, n.d.). Task Force True North is the current Air Force program inspired by the Special Operations Command's Preservation of the Force and Family. Over the years, there have been numerous resilience studies specifically focusing on the military to include the Air Force, Air Force families, and those that have increased stress due to operational workload or combat experiences (Dixon & Bares, 2018).

Global Military

While many studies focus on the United States military, there are still studies showing the effects of resilience on militaries worldwide. One way that resilience has been shown to have a panacea effect on mental health and stress reduction in non-US militaries is through the increase of positive coping styles. Researchers for the Chinese Air Force found, through a study of 697 military members, that resilience was tied to the increase of positive coping styles, which allowed the military members to effectively deal with the psychological stress of military operations and life that cause negative mental health responses (Zhao et al., 2020). Furthermore, Thomassen et al. (2015) found that resilience and cohesion contributed to the increase in stress resilience in a longitudinal study of 144 Norwegian soldiers deployed to Kosovo. Both of these studies aimed to

understand resilience in non-US military populations, and both found significant results relating to the positive effects of resilience. Thomassen et al. specifically noted the possibility that military members may be more resilient because the military attracts more resilient people; on the other hand, the present study assessed whether it is the perception of selectivity onto the team that promotes this increase in resilience.

An interesting finding by Gucciardi et al. (2020) was that there was a link between resilience or mental toughness and stress reduction in special forces selection, which is in line with current research on the topic (Kemplin et al., 2019). Bartone et al. (2008) also found that resilience was a predictor of successful matriculation of a special forces selection course after studying a group of 1,138 special forces candidates. A limitation that was noted by Gucciardi et al. was that mental toughness was not measured throughout the selection course, opening the possibility that resilience is not only a determinate of selection as discussed by Kemplin et al. and Bartone et al., but could be increased through the cohesion that is garnered through the selection process itself as suggested by the Social Identity Theory.

United States Military

The United States military has, by far, the current majority of military-related resilience studies across the globe, with 20 longitudinal studies focused on long term effects of resilience in U.S. military members (Van Der Meulen et al., 2020). One of the most recent longitudinal military resilience studies found over two years that a sample of 2,157 military veterans both exhibited a high level of resilience for being exposed to trauma as well as linking a wide array of health benefits to being psychologically resilient

(Isaacs et al., 2017). Furthermore, Williams et al. (2016) found both unit cohesion and resilience to effect psychological distress and stress tolerance in a sample of 1,939 Army trainees in basic combat training. Both of these researchers used the CD-RISC as the measurement of resilience, showing the measure's acceptance as a good tool for the study of the concept.

Resilience in the Air Force

Air Force specific studies have shed a great deal of light on understanding resilience and how resilience can affect military personnel. As discussed by Van Der Meulen et al. (2020), there have been two recent studies specifically focusing on U.S. Air Force members, both of which have used the CD-RISC as a measure for resilience. Bezdjian et al. (2017) conducted a study with 53,692 over two years to better understand the Connor-Davidson Resilience Scale's psychometric properties. The researchers found that the CD-RISC was a psychometrically sound predictor of resilience and that the military members who exhibited a higher level of resilience than others were more likely to complete their first six months in the Air Force. Unfortunately, resilience scores were not measured after completing basic training, which would indicate whether or not resilience increased as a result of being selected and retained into the Air Force team. McNally et al. (2011), however, found that resilience was not correlated to posttraumatic stress disorder in a case of 144 deployed Air Force medics contradicting Pietrzak et al. (2009) findings in a sample of 272 military veterans, but a small sample size and lack of personnel that developed PTSD may have attributed to the findings. It is important to note that Van Der Meulen et al. (2020) specifically discussed the possibility for the

resilience effect to be stronger in military forces that are faced with higher levels of adversity, which would be true for the United States Air Force EOD career field, whose motto is *Initial Success or Total Failure*. According to Van Der Meulen et al., this level of increased daily adversity faced by these operators should provide a stronger effect size in resilience.

Summary and Conclusions

There is a myriad of studies on cohesion, the salient effects of resilience, as well as both of their antecedents and outcomes, all of which coalesce into an understanding that resilience can and does help solve the problem of stress in the military. The question remains as to how resilience can be strengthened within the military, which is where cohesion and selection become a factor. By understanding that resilience can help reduce stress and negative mental health outcomes in the military, one can focus on increasing the prevalence and strength of this construct, using the Social Identity Theory to understand if selection may be a value-added variable to the current literature on resilience through unit cohesion. Chapter 3 will provide the method and approach that was used to address this question.

Chapter 3: Research Methods

The purpose of this quantitative, non-experimental study was to determine whether or not perceived selectivity moderated the relationship between cohesion and resilience in USAF EOD operators. The research design of the dissertation study to include rationale, population, and sampling procedures will be outlined in the following chapter. Furthermore, each of the three measures will be described and rationalized; the operationalization of the variables will be defined along with the data analysis plan, threats to validity, and finally, ethical concerns.

Research Design and Rationale

The goal of this study was to understand how perceived team selectivity impacts the relationship between cohesion and resilience in USAF EOD operators using a correlational research design. The study had three primary variables. The predictor variable in the study was team cohesion, as measured by the Group Environment Questionnaire-Work Team Version. The outcome variable in this study was the USAF EOD operator's resilience, as measured by the CD-RISC. Finally, the moderator variable was team selectivity, as measured by a modified version of the HSS. All three of these primary variables will be operationalized later in the chapter.

The correlational research design was used for this study because of its popularity within the current cohesion and resilience literature (Bayraktar, 2017; Marlowe et al., 2017; Tseng & Yeh, 2013). The non-experimental nature of current cohesion and resilience research is pronounced and is primarily due to the need to further the understanding of the nature of variables correlated to cohesion and resilience, which this

study was designed to provide (McAndrew et al., 2017; Severt & Estrada, 2015; Vanhove & Herian, 2015). After careful collection of antecedents, moderating, and mediating variables associated with cohesion and resilience, more robust theories can be generated, and experimental designs can start to be cost-effective to test those theories.

Methodology

Population

The target population for the study was EOD operators in the United States Air Force. Congress and Air Force end-strength requirements determine the total population of USAF EOD operators, including Active Duty, Reserve, and National Guard forces, so this number may fluctuate. In the past 5 fiscal years, the authorized population has been between 1,200 and 1,300 and has recently achieved a higher than 90% manning level both within the last 2 fiscal years and projected through the next 2 fiscal years, indicating that the overall population is within 1,100 and 1,200 operators. For this study, the population was estimated at the projected total authorized manning level of 1,301 for the 2022 fiscal year. With varying levels of both authorized and achieved manning within the EOD career field, using the authorized manning level for estimated sample sizes will ensure estimates for power and effect size will be practical.

Sample Size

Past research with the variables of cohesion and resilience has indicated a relationship between the two with effect sizes between .16 and .26 with an average of the six being .21 (Bartone et al., 2002; Howell et al., 2018; Layman et al., 2019; McAndrew et al. 2017; Steinhardt et al., 2003; Thomassen et al., 2015). After a power analysis was

conducted for a multiple regression analysis using the anticipated effect size of .21, a power of .8, two predictors and an alpha level of .05, the minimum required sample size for the study will need to be at least 49, with 63 being the sample size required for the smallest observed effect size of .16. Considering the results of the studies conducted by Aguinis (1995) and Aguinis and Stone-Romero (1997), a larger sample size will be required though. Aguinis (1995) noted that even medium to large moderation effect sizes were difficult to achieve in samples of less than 120, while Aguinis and Stone-Romero (1997) noted a sample size of 300 was optimal for moderated multiple regression analysis. Therefore, the target sample size for the proposed study was 300, with a sample size of 120 being acceptable.

Recruitment

To obtain a sample of USAF EOD operators, who are geographically separated and assigned to Air Force bases worldwide, a social media campaign was used. Social media is the easiest way to reach the entire population of USAF EOD operators and obtain a convenience sample of those that decide to participate. The invitation to participate in the study was broadcast on my personal Social Media page (n=120, USAF EOD). I requested the invitation to be shared throughout the USAF EOD community and posted to the group pages of *Air Force EOD* and *USAF EOD*. The recruitment invitation was the same whether shared on my social media or posted to any of the Air Force EOD social media pages and is provided in Appendix A. With the small, tight-knit community, it is believed that these social media actions, along with word-of-mouth to

those without social media access, allowed the invitation to reach nearly all USAF EOD operators that met the following participation criteria.

1. Participants must have been an adult, over 18 years old.
2. Participants must have been in the United States Air Force at the time of completing the survey.
3. Participants must have been active members of their component service (Active Duty, Reserve, National Guard), not separated at the time of completing the survey.
4. Participants must have graduated from Navy School Explosive Ordnance Disposal.
5. Participants must not have been facing any unfavorable military personnel actions such as Uniformed Code of Military Justice violations or have a current Unfavorable Information File or be on a Control Roster at the time of completing the survey (The psychological separation from the team could affect cohesion and resilience levels).

Instrumentation

The specific information for each of the three measures used for the study will be outlined in the following paragraphs as will each of the variable's operational definition. Perceived selectivity was measured using a modified version of the HSS, cohesion was measured using the GEQ-Work Team Version, and resilience was measured using the CD-RISC. Only one of the measures is copyrighted, the CD-RISC, and permission was obtained from the current owner (Appendix B). The permission obtained for the CD-

RISC is only for its use, and due to copyright protection, the full scale cannot be included for publication. Each of the other measures is in the public domain, and all efforts to contact the original creators of the GEQ were unsuccessful; however, the author of the HSS was able to be contacted as a courtesy, and the original scale was obtained (Appendix C).

Group Environment Questionnaire

Team cohesion was defined as the psychological bonds that form between team members made up of task cohesion, social cohesion, and individual attraction to group, which was measured by the work team revision of the GEQ. The GEQ was originally developed by Widmeyer et al. (1985) for sports teams and was revised by Carless and De Paola (2000) for use in work teams with alpha coefficients of .74, .81, and .63 on task cohesion, social cohesion, and individual attraction to group respectively. Initially, Widmeyer et al. developed the GEQ as an 18-item four-factor measure, but later, Carless and De Paola were unable to replicate the four-factor model and used factor analysis to develop the revised work team version of the GEQ as a 10-item, three-factor model. The measurement consists of 10 items, split into four items assessing task cohesion, four items assessing social cohesion, and two items assessing individual attraction to the group. Each item is answered on a nine-point Likert scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). The scale consisted of several reverse coded items and was scored as a sum for each dimension (Carron, Brawley, & Widmeyer, 2002). This study incorporated the sum of the scores under each dimension, and each dimension was

analyzed independently. An example item from the measure is "*I'm unhappy with my team's desire to win*" (Carless & De Paola, 2000).

Connor-Davidson Resilience Scale

Resilience was defined as the ability to cope with stress or bounce back after trauma and was measured using the CD-RISC. The CD-RISC is a measure developed by Connor and Davidson (2003) to assess resilience. The measure was initially developed as a 25-item scale and had multiple variants. The original 25-item scale was used in the study. Each of the 25 items is rated on a five-point scale, higher scores representing a higher resilience level. The participant answers questions such as "*I am able to adapt when changes occur*" on a scale from 0 (*not true at all*) to 4 (*true nearly all the time*). The scores are then added together with a range from 0-100 with higher scores indicating higher resilience, and no items are reverse coded. Connor and Davidson (2003) found an initial test-retest reliability with a correlation coefficient of .87 and an internal consistency measured by Cronbach's α of .89 for the general population. Furthermore, Connor and Davidson found convergent validity for their scale using the Kobasa hardiness measure, Perceived Stress Scale, and the Sheehan Stress Vulnerability Scale. Finally, it is important to note that the CD-RISC is copyrighted, and as such, the full scale cannot be published.

Hiring Selectivity Scale

Team selectivity is defined as limiting the acceptance into a team through procedure, education, skill, and abilities. How selective a team is, selectivity is a difficult construct to measure. Only one current measurement scale on the construct has been

found to date, which may effectively measure selectivity. In part of their study on attracting new job applicants, Trank et al. (2002) developed the HSS to measure the participant's attraction to an employer based on the level of selectivity the hiring body has for a specific job; this measure has an alpha coefficient of .70. Trank et al. used this measure on a group of 378 business students with a mean score of 4.04 and a standard deviation of .46 to understand their desire to obtain a selective job. While the first measure was used to measure intent, and this has been the only known use of the scale, it represents the construct of team selectivity well as it consists of items ranging from general to specific selection requirements. The general selection question simply asks if the agency is very selective about how it hires, while an example of a specific question would be how selective the team is concerning the member's knowledge, skills, and abilities. The scale consists of six items rated with a five-point scale ranging from 1 (*strongly disagree*) to (*strongly agree*). The scores are averaged, with a higher average score indicating a higher level of selectivity. To lower scale coarseness and increase power, as discussed by Aguinis (1995), the scores were summed as opposed to averaged, giving a range of 6-30.

While the current measure is focused on the selectivity of hiring for a job, I revised the measure to indicate selectivity for a team rather than a job. This revision only minimally changed the overall measure. The changes simply reflect a move from intent to observation and a move from job applicant to team membership. For example, I changed the first statement, "I want to work for a firm that screens job applicants carefully in terms of knowledge, skills, and abilities," to "I am part of a team that selects

members carefully in terms of knowledge, skills, and abilities." The term *I want to work for a firm* that is consistent throughout the measure was changed to *I am part of a team,* and the term *job applicants* was changed to *team members* to convey the focus on team selectivity as opposed to hiring selectivity. Finally, the instructions were changed to reflect the focus on how selective the participant's team currently is as opposed to the preference for one to choose an organization based on how selective the hiring process is.

Data Collection and Analysis

Collection

The survey invitation sent out through social media provided a link to the measures through the website Survey Monkey. The first page of the survey provided informed consent, as seen in Appendix D, to the participant and was required to be acknowledged before collecting data from the participant. The participant's privacy was of utmost importance, so the data collected did not include any identifiable information such as name or the participant's current base or unit assigned to, which was explained in the survey's informed consent page. After informed consent is provided, the next page ensured participants met the criteria for participation. Demographic information was then be collected to include the participant's age, gender, rank, current component (active duty, guard, reserve), time in service, time in EOD, number of deployments either combat or supportive, time on station (to evaluate time with current team), and their individual perception of team selectivity. The perception of team selectivity question will be discussed further in the next section on threats to validity. Furthermore, each of the three measures used in this dissertation was converted to an online survey format and was

completed by the participant after the demographic data, on separate pages. After the data was collected, the participant was given an exit page giving my email address for any further needed contact or questions and being thanked for their time and that their data is private, ensuring that no identifiable information was taken from them (Appendix E).

Research Questions and Hypothesis

The study was designed to answer the research questions listed below, along with their hypotheses.

RQ1 – Does perceived team cohesion level predict individual resilience among USAF EOD Operators?

H_{o1} –Perceived team cohesion level does not predict individual resilience among USAF EOD Operators.

H_{a1} - Perceived team cohesion level predicts individual resilience among USAF EOD Operators.

RQ2 – Does perceived team selectivity moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators?

H_{o2} – Perceived team selectivity does not moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

H_{a2} - Perceived team selectivity moderates the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

Analysis

The collected data was then used to test the research hypotheses using a multiple regression with moderation analysis. The analysis was conducted with IBM's SPSS Version 27. Data was cleaned and screened before being analyzed. First, the data was screened for completeness, which should not be a factor as the participant was given the measures on a single webpage through Survey Monkey and their data should not be submitted until they finished the entire measure, if the participants exit the measure before submitting, then the data was not collected. Due to participants only being able to submit completed measures, if there is a technical problem with data transfer and a participant ends up with an incomplete measure, such as one question left unanswered, that entire participant survey was deleted. Before continuing to the survey, the participants were required to acknowledge informed consent (Appendix D). The final screening of data was to review each participant's answers to the participation criteria questions; if any of the answers indicate the participant did not meet the criteria to participate in the study, the data for that participant will be deleted. It should be noted that not all submissions were completed, and the cases received, and the cases that were deleted during the data cleaning process will be explained in Chapter 4.

Threats to Validity

Threats to External Validity

There were two primary threats to the external validity that had been identified for this study. The first threat to external validity, as described by Creswell and Creswell (2018), is the generalizability of the results. The data was collected from a convenience

sample of USAF EOD operators. The sample was open to the USAF EOD operational community's entirety, but only those with direct or derivative access to social media had access to the invitation. Due to the specialized nature and small population of USAF EOD operators, the study was only generalizable to that community specifically. The results of the study were not generalizable to the rest of the Air Force or Department of Defense but may contribute to the idea of opening up future studies to those populations. The second threat to external validity for this study was environmental. Each of the participants completed the survey on their own, so environmental factors such as time of day, or the type of day they are having, or their personal reaction to the current global pandemic may have unduly influenced the study results. One way to combat the environmental threat to external validity is to limit the participation of operators undergoing any type of unfavorable administrative action against them.

Threats to Internal Validity

There was one primary threat to internal validity found for this study, which is selection. Creswell and Creswell (2018) described selection as a threat to internal validity by selecting participants with certain attributes that will predispose them to specific outcomes. The study specifically targeted a highly selective group of military members, which was by design. This was a calculated risk in the study that was made to ensure that the members' perceptions of their team's selectivity were observed as opposed to looking directly at a selective and non-selective team and reducing the noise in the data from observing selective and non-selective career fields. As previously mentioned, there is already an established relationship that exists between highly resilient

people and making it through the rigorous selection process of highly selective teams discussed by Kemplin et al. (2019) and Bartone et al. (2008). The study aimed to understand how the perception one has of the selectivity of the team they are on is related to the individual's cohesion to the team as well as their resulting resilience, which would not be able to be focused on without the specific selection of a population-based on the highly selective nature of that career. In future studies, one can look at random participants from both selective and non-selective teams or compare groups of selective and non-selective teams to further understand whether it is the team's actual selectivity or the individual's perception of the team that has the most significant relationship.

Threats to Construct Validity

One primary threat to construct validity in this study was the use of a modified scale to measure a construct that is difficult to measure. The HSS was originally used to obtain data from college students on their likelihood to apply for an occupation based on that occupation's selectivity. The test questions revolve around the occupation's selectivity, though, and seem to be a good fit for modification to perceptions of team selectivity. The scale's language was changed to reflect this modification, but with no other measure to compare, a threat to the measure's construct validity was apparent. The scale uses language that is pertinent to team selectivity, such as selection procedures based on knowledge, skills, abilities, and a strong work ethic. This study aimed to measure the individual's perception of the team's selectivity they are a part of, so to combat this threat to construct validity, an additional question was added to the demographic portion of the survey. The extra survey item was to answer the degree to

which the participant agrees or disagrees with the statement, “My team is highly selective” on a 30-point scale ranging from 1 (*strongly disagree*) to 30 (*strongly agree*) to coincide with the range of the HSS. The score from the HSS was checked against the extra survey item to ensure to the greatest extent possible the construct validity of the modified scale and will be discussed further in Chapter 4. If the answers between the HSS and general selectivity question were not correlated, the data would still be interpreted but would be analyzed individually, and issues of construct validity will be discussed in Chapters 4 and 5.

Ethical Procedures

The participants’ confidentiality and privacy were ensured through the use of the third-party website, Survey Monkey. The recruitment of participants in the study was directly through social media. It required no additional agreement from the Department of Defense or the Department of the Air Force, as the participants were invited solely through social media. No official communication or notification will be sought. It must be noted that this was not an official Air Force study. The views, results, and implications written in this study are specifically that of the author; data was collected solely through social media. There is no specific or implied endorsement by the United States Air Force or Department of Defense. All participants were directly or derivatively socially connected to the author, and no official time, manpower, or funds were used in this study. Furthermore, the participants were instructed in the study invitation not to complete the survey during their time on official duty but rather were instructed to complete the survey on their off-duty time. During the survey, participants were advised

that this survey is done on a completely voluntary basis, and identification data will not be collected from them. Participants were able to exit the survey, without data being analyzed, all the way until they click on the "submit" button. The data collected is kept on a removable storage device, the file password-protected, and physically locked in my safe for no less than 5 years. While I am a USAF EOD operator, all data was collected with I was on a sabbatical from the military, my entrance back onto active duty occurred after data had been collected and analyzed. While my position within the EOD career field provided access to that population, no conflicts of interest or power differentials were prevalent due to being separated from the military during the actual collection of data. Finally, before collecting any data, permission was obtained from Walden University's Institutional Review Board, approval number 09-21-20-0754845, to ensure all ethical standards were met; data was then collected according to the approved application ethical guidelines outlined by the Institutional Review Board.

Summary

Chapter 3 provided an in-depth analysis of the research design, methodology, and instrumentation that was used for this study. The research design that was employed to answer the two research questions was a non-experimental correlational design using a convenience sample of USAF EOD operators. Operational definitions were given for each of the three prime variables and information on the instruments obtained to measure those variables through the revised GEQ, modified HSS, and CD-RISC. Furthermore, the reliability and validity of the testing instruments were provided, and threats to external, internal, and construct validity were addressed. Finally, a multiple linear

regression with a moderator variable will be used to analyze the data to test the hypotheses for the research questions. In Chapter 4, the results of the study will be analyzed.

Chapter 4: Results

The purpose of this quantitative, non-experimental study was to determine whether or not perceived selectivity moderated the relationship between cohesion and resilience in USAF EOD operators. The research design of the dissertation study to include rationale, population, and sampling procedures will be outlined in the following chapter. Furthermore, each of the three measures will be described and rationalized; the operationalization of the variables will be defined along with the data analysis plan, threats to validity, and finally, ethical concerns. The two research questions with their hypotheses for this study are:

RQ1: Does perceived team cohesion level predict individual resilience among USAF EOD Operators?

H_{o1}: Perceived team cohesion level does not predict individual resilience among USAF EOD Operators.

H_{a1}: Perceived team cohesion level predicts individual resilience among USAF EOD Operators.

RQ2: Does perceived team selectivity moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators?

H_{o2}: Perceived team selectivity does not moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

H_{a2}: Perceived team selectivity moderates the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

Chapter 4 will outline the results of the study that was conducted. First, the pilot study that was conducted will be described along with the benefits, lessons learned, and changes made because of it. Data collection efforts will then be given along with the time frame for collection, discrepancies from Chapter 3, and baseline descriptive statistics. Finally, the study results will be reported with demographics that characterize the sample, statistical assumptions, and the statistical analyses to address the research questions along with all of the appropriate tables and figures to illustrate the results.

Pilot Study

A pilot study was conducted with my friends and family to obtain data to ensure the study's logistical readiness before data collection. This pilot study was used only to work on issues of readability and delivery; the participants were told to click through the surveys randomly and not actually provide any personal data. There were two major findings from the pilot study that informed changes made to the actual study. The first finding was that the participant's Internet Protocol addresses were being recorded, which meant the survey might not have been fully confidential. The second issue was that if a participant clicked on the wrong box, especially in the criteria section, they could not go back and correct their responses. The fix that was implemented from these issues was to apply an option within the service that allowed for the Internet Protocol addresses not to be collected. Withholding the collection of Internet Protocol addresses allowed the survey to be fully confidential and allowed the participants to retake the survey if they mistakenly checked one of the criteria boxes incorrectly. While this did allow one to take

multiple surveys, it is assumed that the participants had the integrity only to take the full survey once.

Data Collection

Data collection efforts were completed in a quick time frame. The target sample size was reached in 14 days; by the time the survey was closed, a total usable sample of 311 participants was obtained. Survey Monkey gave an up-to-date completion rate, and while the service did record all survey attempts, it did provide data on completed surveys, so the survey was closed after the total completed surveys reached the target sample size. As reported by Survey Monkey, total responses were 388 participants with a 79% total completion rate. Of the 388 participants, 32 did not meet the study's criteria, and 45 did not complete the full survey, leaving the total participants to 311. The 45 participants excluded from incomplete surveys did not miss specific questions but rather missed entire sections of the survey, such as the entire GEQ, HSS, or CD-RISC, making the inclusion of the data using common techniques such as mean substitution unwarranted. It is assumed with those incomplete surveys that the respondents simply exited the survey and thus did not want their data collected.

Measurement Reliability

Each of the measures was tested for reliability and internal consistency using Cronbach's alpha. Team cohesion as measured by the GEQ had an overall acceptable reliability score of $\alpha = .87$ as well as each of the dimensions of task cohesion ($\alpha = .78$), social cohesion ($\alpha = .90$), and individual attraction to group ($\alpha = .88$). The CD-RISC held an acceptable reliability score of $\alpha = .88$. Furthermore, the HSS had a very good

reliability score of $\alpha = .89$. Finally, due to the HSS being modified, it was measured against the participants' individual question, rating their perception of their team's selectivity, achieving a significant Pearson correlation ($r = .563$, $p < .001$), strengthening the content validity of the HSS.

Demographics

The respondents of the survey were primarily male, middle-aged, career active-duty airmen. There were 293 men (94.2%) and 18 women (5.8%) that participated. Over half of the respondents were career airmen, 78 (25.1%) E-5 Staff Sergeants, and 80 (25.7%) E-6 Technical Sergeants, with an average of 12.3 years in the Air Force. Table 1 shows the frequencies and percentages of the nominal demographic data.

Table 1

Frequency Table for Nominal Demographics of Participants

Variable	*N*	*%*
Gender		
Male	293	94.2
Female	18	5.8
Component		
Active duty	253	81.4
Reserve	44	14.1
National guard	14	4.5
Enlisted rank	301	96.7
Airman (E-1—E-4)	34	10.9
NCO (E-5—E6)	158	50.8
SNCO (E-7—E8)	109	35
Officer rank	10	3.2
CGO (O-1—O-3)	8	2.6
FGO (O-4—O-6)	2	.6

Note. Enlisted and Officer ranks were grouped for brevity. NCO – Noncommissioned Officer; SNCO – Senior Noncommissioned Officer; CGO – Company Grade Officer; FGO – Field Grade Officer.

The data was generally representative of the Air Force EOD career field. The participants had a strong age range of 2-52, with the average being middle-aged (*M* = 33,

SD = 6.16). Most of the respondents were in the middle of their Air Force career regarding their Time in Service (*M* = 12.34, *SD* = 5.95) and ranging from 2-33 years. Furthermore, most of the respondents' time in the EOD career field (*M* = 10.86, *SD* = 5.96) indicated most went straight into the 1-year-long EOD school after entering into the Air Force. Finally, deployments were indicative of a wide range of military experiences; combat deployments (*M* = 1.82, *SD* = 1.88) ranged from 0-8; noncombat deployments (*M* = 1.27, *SD* = 1.22) ranged from 0-8 as well; total deployments (*M* = 3.08, *SD* = 2.52) ranged from 0-13 which provides a wide range of deployment experiences for the entire data set. Table 2 shows the descriptive statics for these continuous variables. While there is no direct data available currently on the demographics of the EOD career field, the data are not too dissimilar from demographics reported by Air Force Magazine (2018), which show predominately male (80.7%), enlisted (81%) airman. Unfortunately, there was not a larger portion of women and younger Airmen in the sample with less time in service, making the results difficult to generalize to those populations of EOD operators.

Table 2

Descriptive Statistics for Continuous Demographics of Participants

Variable	*M*	*SD*	Minimum	Maximum
Age	32.93	6.16	20	52
Time in service (years)	12.35	5.95	2	33
Time in EOD (years)	10.87	5.97	.5	25
Deployments				
Combat	1.82	1.88	0	8
Noncombat	1.27	1.22	0	8
Total	3.08	2.52	0	13

Note. EOD-Explosive Ordnance Disposal.

Study Results

This study comprised of two research questions. Each research question will be addressed in this section with each statistical analysis that was performed to test the associated hypotheses. The research question will first be stated, along with the associated hypothesis, the type of statistical test that was performed, the assumptions for the test, and the results. Tables and figures are used to illustrate the results of each set of assumptions and statistical analysis.

Research Question 1

RQ1: Does perceived team cohesion level predict individual resilience among USAF EOD Operators?

H_o1: Perceived team cohesion level does not predict individual resilience among USAF EOD Operators.

H_a1: Perceived team cohesion level predicts individual resilience among USAF EOD Operators.

Assumptions

The data collected from the sample was analyzed with respect to the major variables of Cohesion, Selectivity, and Resilience. The predictor variable of Cohesion, as measured by the GEQ-Work Team Version, had three dimensions which were Task Cohesion, Social Cohesion, and Individual Attraction to Group. Each of these dimensions were analyzed together for the first research question entered into SPSS as three separate predictor variables, and then put in independent models for the second research question. Each of the variables was tested for the assumptions related to multiple regression analysis: linearity, normality, homoscedasticity, and independence of errors in estimation (Hayes, 2018). Each of the assumptions was within limits described by Hayes (2018) to continue interpreting the results. The normality assumption can be seen in Figure 1 with the histogram of standardized residuals and the closeness of the points to the normal P-P plot lines, as seen in Figure 2. Furthermore, a scatterplot indicating the assumptions of linearity and homogeneity appears to be acceptable and can be seen in Figure 3. Finally,

the assumption of collinearity being within acceptable limits can be seen in Table 3, with all three cohesion dimensions having a reasonably low VIF.

Figure 1

Histogram of Standardized Residuals for Dimensions of Cohesion and Resilience

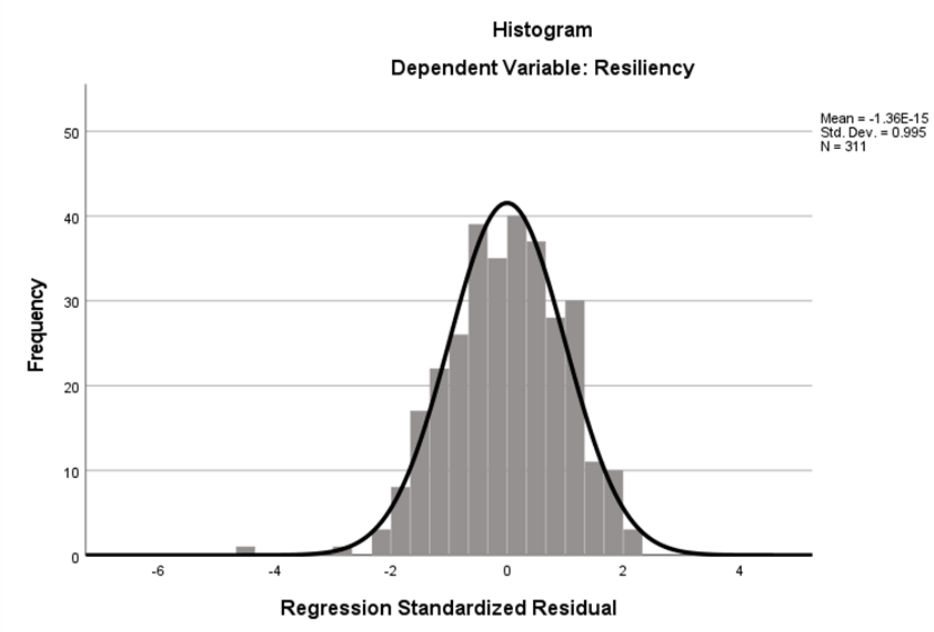


Figure 2

P-P Scatterplot for Normality of Dimensions of Cohesion and Resilience

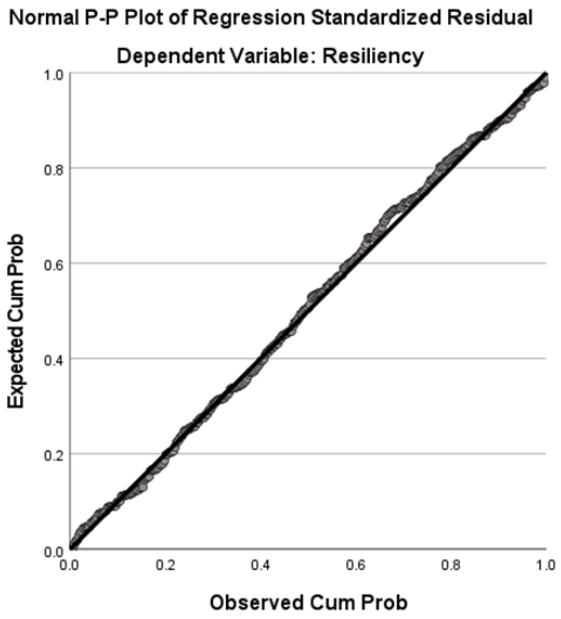


Figure 3

Scatterplot of Standardized Residuals of Dimensions of Cohesion and Resilience

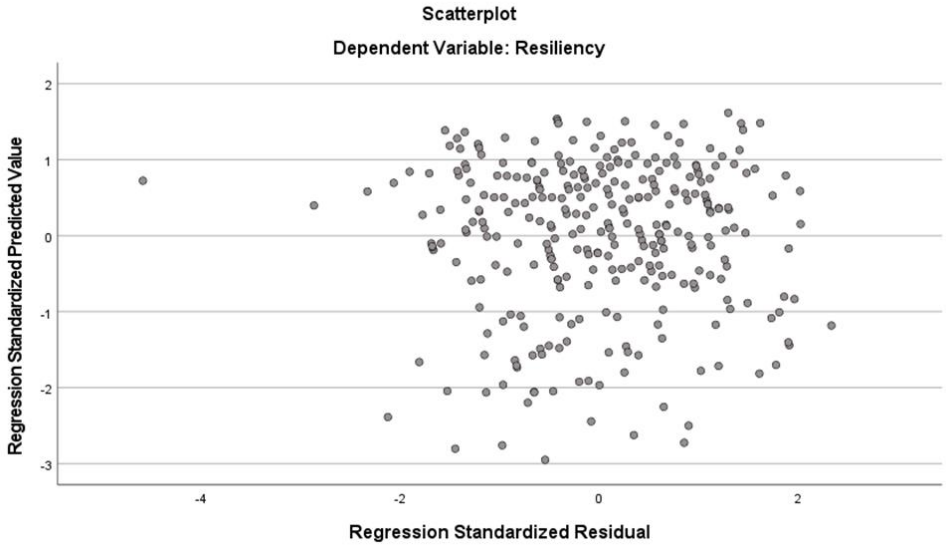


Table 3

Predictor Variable Collinearity Statistics

Variable	Tolerance	VIF
Task Cohesion	.66	1.26
Social Cohesion	.62	1.59
Individual Attraction to Group	.61	1.53

Note. Outcome Variable-Resilience. VIF-Variance Inflation Factor.

Multiple Linear Regression

RQ1 addressed the possible relationship between team cohesion and resilience in the sample. Team cohesion comprises three dimensions: Task cohesion, social cohesion, and individual attraction to group. Each of the dimensions was loaded into a regression model in SPSS Version 27 to test each of the dimensions' predictive ability on resilience levels. The null hypothesis for RQ1 was that cohesion levels would not significantly predict resilience levels. The regression statistics for RQ1 are shown in Table 4.

Table 4

Regression Statistics for Cohesion predicting for Resilience

Variable	B	SE B	β	*t*	*p*
Task Cohesion	.081	.091	.055	.888	.375
Social Cohesion	.095	.094	.071	1.008	.314
Individual Attraction to Group	.349	.162	.148	2.156	.032

Note. Outcome Variable: Resilience

The overall results of the multiple linear regression were statically significant, $F(3, 307) = 5.566$, $p < .001$, $R^2 = .052$, indicating that the dimensions of cohesion do significantly predict resilience in USAF EOD operators. The R^2 (.052) value indicated in the model shows that about 5.2% of the variation in USAF EOD resilience levels is accounted for by the three dimensions of cohesion. In the regression model, only the cohesion dimension of individual attraction to group ($t = 2.516$, $p < .05$) provided any significant contribution. With a significant overall model for RQ1, the null hypothesis (H_{o1}) was rejected, and the alternative hypothesis was kept (H_{a1}); therefore, the moderation analysis for RQ2 was then conducted.

Research Question 2

RQ2 – Does perceived team selectivity moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators?

H_{o2} – Perceived team selectivity does not moderate the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

H_{a2} - Perceived team selectivity moderates the relationship between perceived team cohesion and individual resilience among USAF EOD Operators.

As discussed by Hayes (2018), a moderator is a variable that influences the relationship between two other variables. Each of the dimensions of cohesion was individually analyzed using PROCESS with selectivity as a moderator variable, with the outcome variable staying as resilience. A multiple regression analysis through SPSS was also conducted the traditional route, with each of the dimensions of cohesion and selectivity and the interaction of selectivity and the respective dimension to obtain VIF

collinearity statistics that were not provided as an output of the PROCESS model. The interaction variable was created by multiplying the respective dimension of cohesion and selectivity and adding that variable to the regression analysis.

Assumptions

Within their respective models, each of the variables was tested for the assumptions related to multiple regression analysis: linearity, normality, homoscedasticity, and independence of errors in estimation (Hayes, 2018). Some of the assumptions were not met, as will be described below; however, Hayes (2018) discussed that not all data would meet all of the multiple regression assumptions and will continue to be interpreted. The assumption of normality of errors for the task cohesion, social cohesion, and individual attraction to group can be seen in Figures 4, 7, and 10, respectively, with the histogram of standardized residuals and the closeness of the points to the lines in the normal P-P plot as seen in Figure 5, 8, 11. Furthermore, a scatterplot indicating the assumptions of linearity and homogeneity appears to be only acceptable in the task cohesion model seen in Figure 6, but violating the assumptions with a strong group and possible linear relationship for the social cohesion and individual attraction to group model which can be seen in Figures 9 and 12 respectively. Finally, the assumption of collinearity seems to be violated with very large VIF scores for all three models, as seen in Table 5, but will be interpreted as inferences in moderation interactions can still be made when collinearity assumptions have been violated as described by Hayes (2018).

Figure 4

Histogram of Standardized Residuals for Task Cohesion, Selectivity, and Resilience

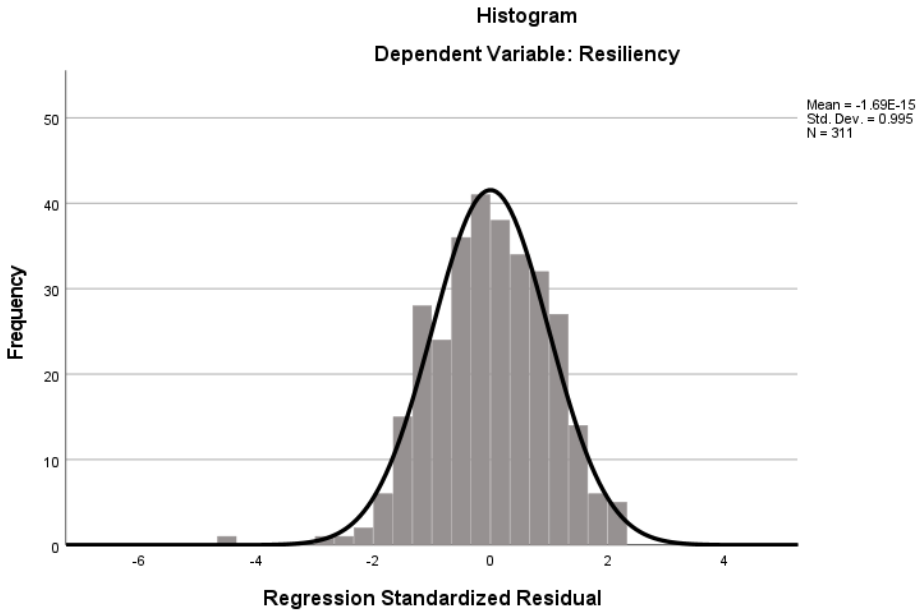


Figure 5

P-P Scatterplot for Normality of Task Cohesion, Selectivity, and Resilience

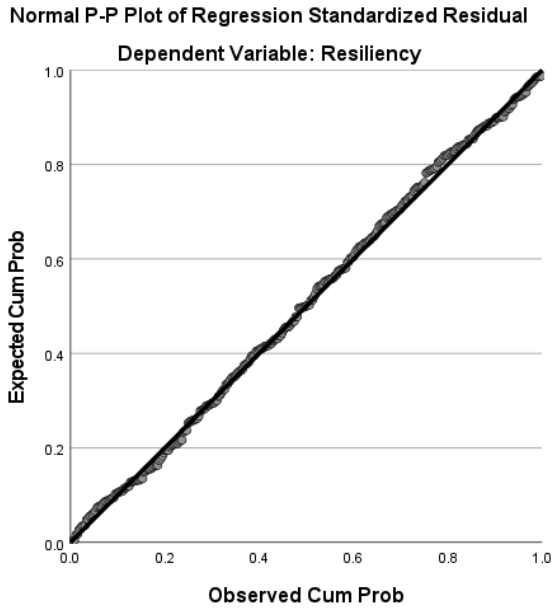


Figure 6

Scatterplot of Standardized Residuals of Task Cohesion, Selectivity, and Resilience

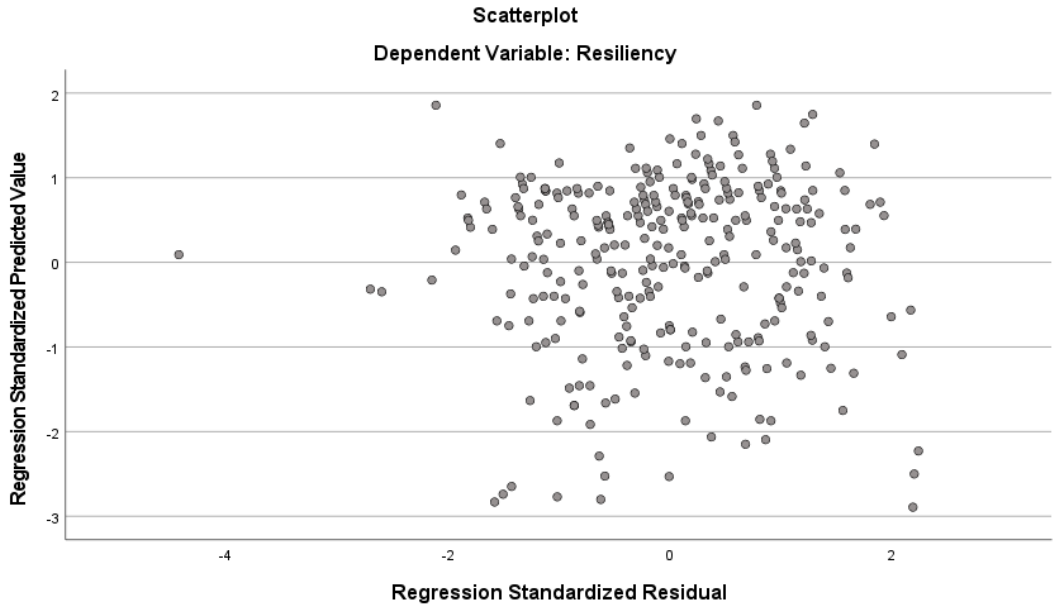


Figure 7

Histogram of Standardized Residuals for Social Cohesion, Selectivity, and Resilience

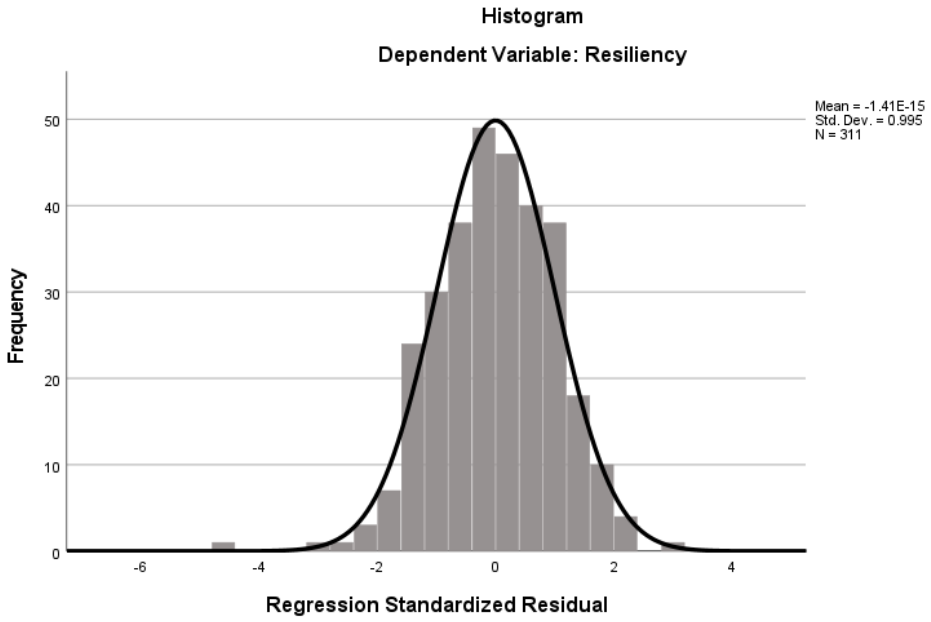


Figure 8

P-P Scatterplot for Normality of Social Cohesion, Selectivity, and Resilience

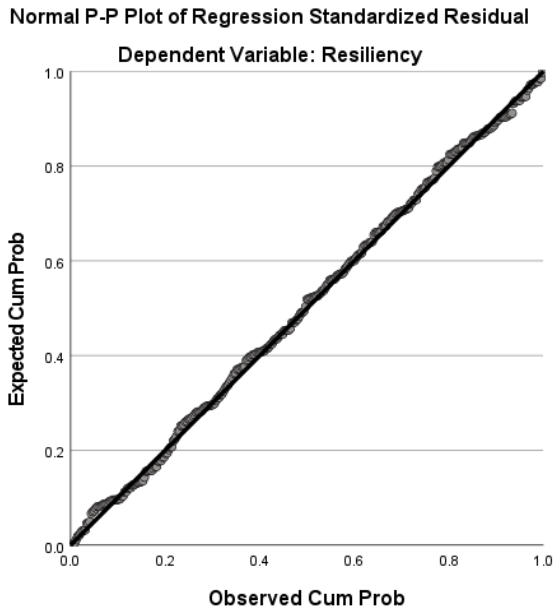


Figure 9

Scatterplot of Standardized Residuals of Social Cohesion, Selectivity, and Resilience

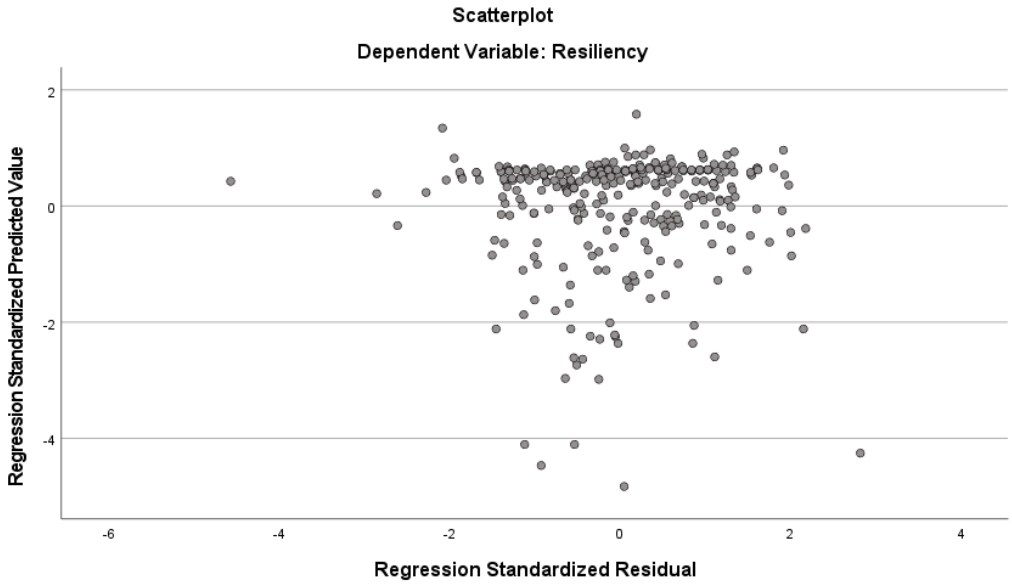


Figure 10

Histogram of Standardized Residuals for Individual Attraction to Group, Selectivity, and Resilience

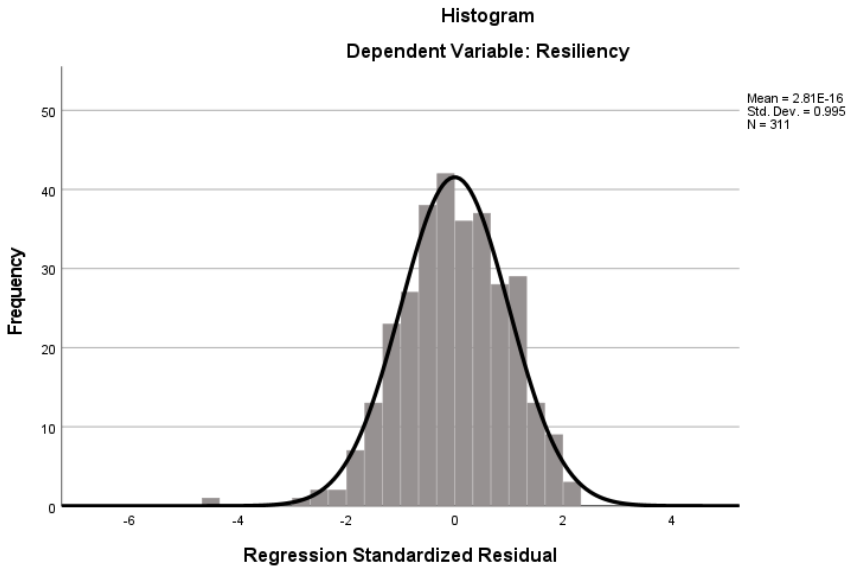


Figure 11

P-P Scatterplot for Normality of Individual Attraction to Group, Selectivity, and Resilience

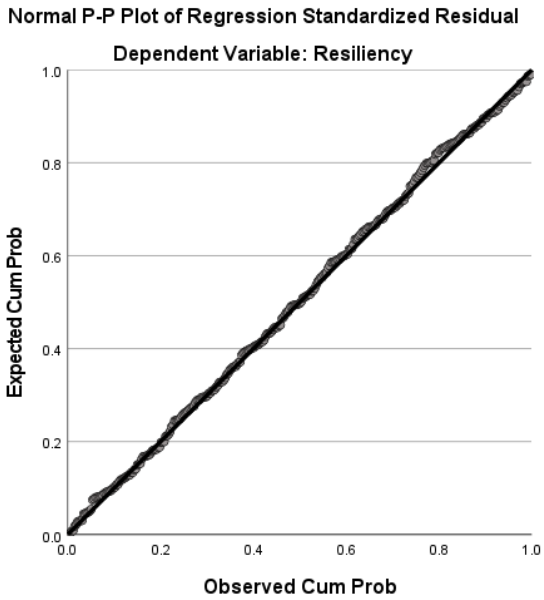


Figure 12

Scatterplot of Standardized Residuals of Individual Attraction to Group, Selectivity, and Resilience

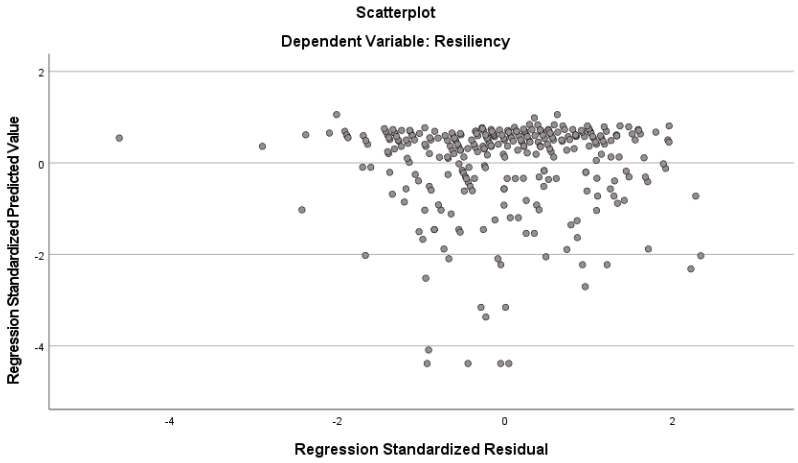


Table 5

Predictor Variable and Moderator Collinearity Statistics

Variable	Tolerance	VIF
Task Cohesion	.072	13.956
Selectivity	.137	7.296
Interaction	.035	28.658
Social Cohesion	.084	11.892
Selectivity	.130	7.673
Interaction	.040	25.005
Individual Attraction to Group	.086	11.682
Selectivity	.130	7.690
Interaction	.039	25.331

Note. Outcome Variable-Resilience. VIF-Variance Inflation Factor.

Multiple Linear Regression with Moderation

To test the hypothesis for RQ2, a multiple linear regression analysis with moderation was conducted using model 1 in the Hayes (2018) PROCESS macro in SPSS. The model created by task cohesion was statistically significant, $F(3, 307) = 4.798$, $p < .01$, $R^2 = .045$, but neither of the individual predictors achieved a statistically significant outcome; issues of collinearity may have influenced the significance of the model. The model created by individual attraction to group was also statistically significant $F(3, 307) = 7.551$, $p < .001$, $R^2 = .069$. Selectivity did not significantly moderate the relationship between individual attraction to group and resilience in that model. The model created by social cohesion was statistically significant, $F(3, 307) = 7.338$, $p < .001$, $R^2 = .067$. In the social cohesion model, the predictive ability of social cohesion and selectivity were significant as well as the moderation of selectivity on social cohesion and resilience ($p < .001$); therefore, the null hypothesis (H_{o2}) was rejected, and the alternative hypothesis was kept (H_{a2}), selectivity did moderate the relationship between cohesion and resilience. Figure 13 shows the difference in the slope of the lines between social cohesion and resilience scores with different selectivity levels. Each of the models with their associated significance values can be seen in Table 6.

Table 6

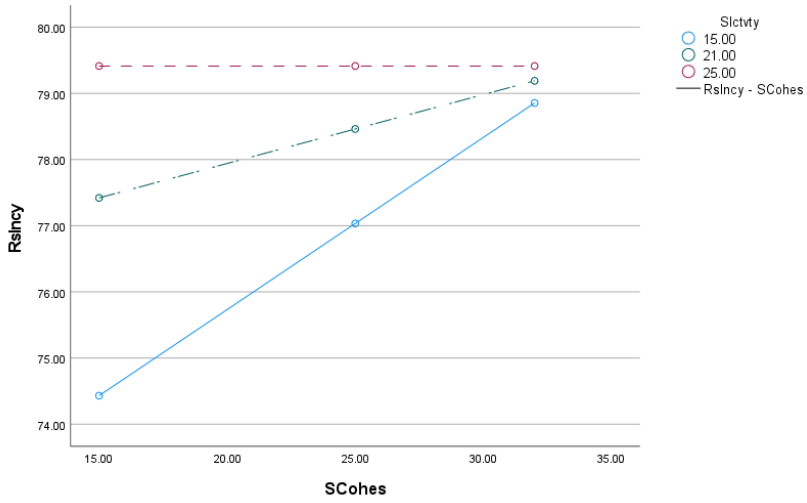
Moderation Model Regression Statistics

Variable	B	SE B	β	*t*	*p*
Task Cohesion	.0714	.3045	.049	.2344	.8148
Selectivity	.3733	.2949	.191	1.266	.2065
Interaction	-.0005	.0140	-.010	-.0343	.9727
Social Cohesion	.651	.255	.486	2.554	.011
Selectivity	.889	.299	.454	2.973	.003
Interaction	-.026	.013	-.573	-2.077	.039
Individual Attraction to Group	1.048	.443	.445	2.366	.019
Selectivity	.741	.299	.379	2.480	.014
Interaction	-.038	.023	-.469	-1.692	.092

Note. Outcome variable – Resilience.

Figure 13

Social Cohesion and Resilience Moderated by Resilience



Summary

The purpose of this study was to determine if perceived selectivity moderated the relationship between cohesion and resilience in USAF EOD operators. The first research question addressed the initial assumption that there was a relationship between cohesion and resilience. The multiple linear regression analysis with the dimensions of cohesion produced a statistically significant predictive model on resilience, which rejected the null hypothesis and allowed further analysis of moderation. Selectivity was found to be a significant moderator in the relationship between cohesion and resilience in the social cohesion regression model, which rejected the null hypothesis; the alternative hypothesis was kept indicating that selectivity significantly moderated the relationship between cohesion and resilience. It is noted that the data did not fit all of the assumptions for regression analysis, specifically collinearity; therefore, the alternative hypothesis of RQ2 and all interpretations of it are made with the knowledge that the assumption of collinearity has been violated. Chapter 5 will address the interpretation of these findings, the limitations of the study, recommendations for future research, and the implications for social change, and conclusion.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to understand better the relationships between team cohesion, perceived selectivity, and resilience in USAF EOD operators. A quantitative, non-experimental correlational study was designed to address two primary research questions on whether there is a significant predictive relationship between the three dimensions of cohesion and resilience as well as whether one's individual perception of the selectivity of their team would significantly moderate that relationship. A convenience sample of 311 USAF EOD operators was obtained through social media via an online survey that included demographic information, the GEQ work team version, the HSS, and the CD-RISC. The three dimensions of cohesion, task cohesion, social cohesion, and individual attraction to group were tested as predictors of resilience using a multiple regression analysis. Furthermore, a moderation analysis was conducted independently on each cohesion dimension with perceived selectivity as the moderator. Both of the overall models for the research questions were significant, specifically between individual attraction to group and resilience, as well as perceived selectivity significantly moderating the relationship between social cohesion and resilience. However, all of the moderation analyses did reveal high levels of multicollinearity.

This chapter will focus on the interpretation of the research analyses that were conducted. Furthermore, the limitations of the study, recommendations for future research, and the implications for social change will be discussed. Finally, I will end the chapter with a summary and conclusion.

Interpretation of Findings

Cohesion and Resilience

The first research question was asked to verify the relationship between cohesion and resilience discussed in current literature before testing a moderation on that relationship. As found with the overall regression model between cohesion and resilience $F(3, 307) = 5.566$, $p < .001$, $R^2 = .052$, the three dimensions of cohesion could significantly predict 5.2% of the variance in resilience. Specifically, the cohesion dimension of individual attraction to group accounted for a significant portion of the model. The independent relationships that each of the dimensions of cohesion confirmed the multi-dimensional nature of cohesion that Severt and Estrada (2015) discussed. The lack of significant contributions from task cohesion on the relationship to resilience also is in line with research showing that task cohesion has a high association with performance functions (Beal et al., 2003; Castano et al., 2013; Mathieu et al., 2019). The significant contribution by the individual attraction to group to the overall regression model of cohesion and resilience coincides with Carless and De Paola (2000) through the lens of Tajfel and Turner's Social Identity Theory, in that the individual attraction to group dimension is centered on being accepted by the group which would affect the social bonds discussed by Severt and Estrada (2015) allowing for an increase in resilience.

The fact that social cohesion did not directly contribute to the model, although it was greater that task cohesion, is curious and goes against the assertions of Severt and Estrada (2015) and Vanhove and Herian (2015). The overall model of cohesion was

significant, though. Still, Zang et al. (2017) and Griffith (2015) found relationships between social cohesion and positive mental health. They did not use the same measurements as in this study, however, nor did they measure resilience, but rather mental health outcomes such as posttraumatic cognitions and suicidal thoughts (Griffith et al., 2015; Zang et al., 2017). It could be possible that the individual attraction to group and social cohesion scales are so closely related that they may need to be added together, or a more comprehensive and well-defined test for cohesion may need to be developed as more data are obtained testing the precise dimensions of cohesion.

Selectivity as a Moderator

Out of the three moderator models that were created to test the second hypothesis, that selectivity was a significant moderator on the relationship between cohesion and resilience, the social cohesion model $F(3, 307) = 7.338$, $p < .001$, $R^2 = .067$ was both significant for the cohesion dimension and the moderation effect. With the model significantly predicting 6.7% of the variance in resilience, it aligns with previous research conducted by Zang et al. (2017) and Griffith et al. (2015). Having a significant relationship between social cohesion and resilience confirms the assertion by Vanhove and Herian (2015). Furthermore, perceived selectivity as a moderator of the cohesion and resilience relationship does fall within the understanding of Tajfel and Turner's (1979) Social Identity Theory. In the context of the Social Identity Theory, it would appear that perceived selectivity may be acting as a force of cohesion, acting on the more elite in-group as they compare themselves to an out-group. The feeling of eliteness, that

not everyone can be a part of their in-group, would bring about a greater sense of cohesion.

While collinearity assumptions were not met, the models are still interpretable as predictors, and inferences can be made about the moderation relationship (Hayes, 2018). The most interesting aspect of the moderation interaction of selectivity on cohesion and resilience is that it was significant at the lower levels of selectivity, as seen in Figure 13. With the sample of USAF EOD operators, their perception of selectivity only tends to interact with the cohesion-resilience relationship when their perception of their team's selectivity is low, which exhibits a sharp change in slope. It would seem that if one's perception of their team's selectivity is low, that they believe their team is not selective at all, then social cohesion has a much stronger positive relationship to resilience. In the context of the Social Identity Theory, without the force of selectivity and comparison between the in-group and the out-group, social cohesion within the group becomes a stronger force to act on resilience. The interpretation of this must be done within the context that this was not a longitudinal study nor an experiment, so order and causality cannot be determined, but inferences can be made. Interpretation for the moderation relationship of selectivity between cohesion and resilience would be that if the individual does not believe that they are in a unique or elite team, which would be a major force for cohesion, then more focus is put on their social cohesion and individual attraction to their group to predict how resilient they may be. In other words, those that are already strongly perceiving their team as elite will have stronger cohesion and strong resilience, but when they do not perceive selectivity in their team, then all of the focus is put on the

social cohesion and individual attraction to group to understand where their resilience levels may lay. By understanding an individual's perceived selectivity of their team, commanders can know where to emphasize increasing cohesion to benefit resilience. Now commanders can strengthen both cohesion and the understanding of their team's selectivity in order to strengthen resilience.

Limitations of the Study

This study had three principal limitations, one validity limitation, and finally, a previously unthought-of limitation. The first principal limitation to this study, as with most studies, is the issue of generalizability. This study took a convenience sample of USAF EOD operators to understand relationships of selectivity on resilience and cohesion. Even with a large sample size of 311 USAF EOD operators, there were still some Airmen that were underrepresented, such as lower enlisted, female, Reserve, Guard, and those that are younger. While these are normally minorities of the USAF EOD career field, they are underrepresented in this study, by how much, however, was not possible to ascertain as that data is not currently accessible. The data is somewhat similar at least to current Air Force demographic data reported by Air Force Magazine (2018), which show predominately male (80.7%), enlisted (81%) airman. Without a complete understanding of demographics, generalizability to the EOD career field would be possible but done with the understanding that not every demographic within the career field was correctly represented; however, most demographics did have some level of representation in the study. Generalization outside of the highly selective USAF EOD

career field to the rest of the Civil Engineer field or the Air Force would not be recommended.

The second principal limitation to this study was from the correlational research design that the study implemented. While the correlational research design is good for unobtrusively collecting data without utilizing extensive resources, the design prohibits making inferences on causation. Furthermore, using cross-sectional data, observing people in a snapshot of time, makes the inference on the order of relationships difficult.

The third principal limitation to this study was with possible bias. As a USAF EOD operator, I could have bias during the study or prompt bias in data collection. There were many blocks put in place to ensure bias would not be present in the study. First, data was collected anonymously online, so there was no way to know who would take the survey, which was clearly stated in the invitation and in the survey itself. Second, I was part of the Career Intermission Program, a type of sabbatical for the military, during data collection, so I was not actively a member of the military, nor in any person's chain of command during the collection of data. Every effort was made to ensure that bias was minimized. There was no undue influence inflicted upon any member of the EOD community to take the survey or give any particular answers.

One primary limitation on validity was addressed in this study. The HSS was modified from its original version to measure team selectivity rather than employer selectivity on employees. The modifications were specifically to the language of the questions. To increase the validity of the scale, a question was asked in the survey to have the participant give their direct perception of their team's selectivity on a scale from

1-30 to coincide with the HSS output. The individual question was measured against the HSS output for each participant achieving a significant Pearson correlation ($r = .563$, $p < .001$), strengthening the content validity of the HSS.

Finally, this study measured both cohesion and resilience during the COVID-19 global pandemic. Data was collected in the fall of 2020. There were points in 2020 where military people had a Stop Movement order, there were quarantines, and even military first responders did not all go to work at the same time. Some USAF EOD were remotely working, with only the required manning to sustain their individual missions in place. It is unclear yet as to how all of these factors may influence resilience or the dimensions of cohesion, especially social cohesion. With remote working, mass quarantines, the stress of a global pandemic, and major disruptions in normal day-to-day life, it would be imprudent to not include the pandemic as a significant limitation. However, it would also be imprudent not to understand that collecting this data during such a stressful time will help shed light in the future as to what effects the global pandemic had on the USAF EOD community.

Recommendations

Research on cohesion and resilience is still an ongoing topic, but incorporating perceived selectivity and USAF EOD operators as a population is rather novel and requires additional research. Future research should further expand this study into a comparative analysis across military career fields to ensure the generalizability of findings across the Air Force. Furthermore, additional research should obtain the full demographics of the specific career fields that are being represented to ensure the

participants' demographics closely match the career fields. One way to obtain a closer representative sample would be to obtain a greater sample, over advertise to underrepresented demographics, or employ stratification to ensure that the proper percentage of specific demographics is represented. Furthermore, future research should focus on longitudinal studies to determine levels of perceived selectivity, cohesion, and resilience through the lifespan of a USAF EOD operator through initial recruitment, basic military training, NAVSCOLEOD as well as through the rest of their career to establish the order at which these occur and the how they may increase or decrease with time, using the GEQ, modified HSS, and CD-RISC. Additionally, more research is needed to further develop a scale or increase the validity of the currently modified HSS to determine an individual's perceived selectivity of teams. Finally, further data must be obtained after the global pandemic to be compared to past and present data on cohesion and resilience to see how COVID-19 has affected the cohesion and resilience of those that experienced living through the pandemic.

Implications

This study can promote social change at the individual, family, and organizational levels through leadership practice in the military organization. The study was able to apply Tafel and Turner's (1979) Social Identity Theory to understand how the perception of selectivity in a team may be related to social cohesion and resilience. Given this understanding, further research can be conducted to further the concept of perceived selectivity, through comparative studies, to create leadership interventions to possibly increase cohesion and resilience in USAF EOD operators and possibly other Airmen.

Leadership interventions to increase individuals' perceived selectivity of their teams could strengthen the individual's cohesion and resilience, allowing them to bounce back from stress more easily. Furthermore, increased resilience in the individual could benefit the family by bouncing back from the military's stressors and not bringing the stress home. Finally, by increasing individual resilience, the organization benefits from a more effective fighting force that is capable of reentering the fight after significant or sustained stress.

Conclusion

Explosive Ordnance Disposal is one of the most stressful jobs in the military (Woodruff, 2018). Being a USAF EOD operator, I can attest to the incredible pressures both war and peace can place upon the individual. It is the military's job to fight in war and prepare to fight in peace; the military member's mission is never over, and the stress is unrelating. While this study did not solve the problem of stress in the workplace or the military or even USAF EOD operators, it did take a step in that direction. By opening the doors to the USAF EOD population and connecting selectivity, cohesion, and resilience, one step toward a more resilient force has been made. It is hoped that this small study can open the doors to more studies and greater populations so that we as a research community can understand cohesion and resilience at a level that we can ensure that our teams become efficient, cohesive units and our individuals are highly resilient, so that no matter what stress the life of a USAF EOD operator can bring, they will be able to bounce back from it and continue to live our motto: *Initial Success or Total Failure.*

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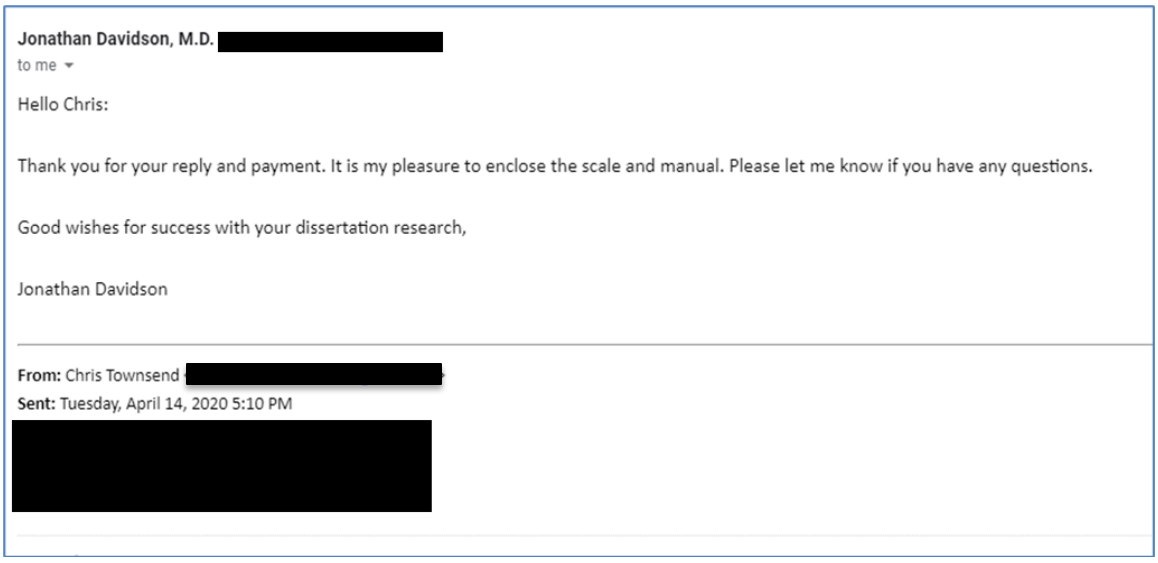
Appendix A: Recruitment Invitation

Dear EOD friends and family,

I am calling on all current Air Force Active Duty, National Guard, and Reserve EOD Airmen for some help. I am completing my dissertation entitled "Perceived Selectivity as a Moderator of Cohesion and Resilience in USAF EOD Operators" and I need your help to complete the study. This study is completely voluntary and to be completed off-duty, but will hopefully provide the EOD and Air Force community valuable insight as to the role that the selectivity of our career field plays between team cohesion and resilience. The survey will only take about 10-15 minutes to complete and will help me out greatly. The only criteria to complete the survey is that you are currently a current member of the United States Air Force Total Force EOD community (Active Duty, Guard, or Reserve), have completed NAVSCOLEOD, be over the age of 18, and not be facing any unfavorable military personnel actions (UCMJ violation, UIF, or be on a Control Roster). The survey itself is very straightforward and completely private, your name will never be asked, and even I will not know who does or does not complete the survey, I will only receive the data after the results have been submitted. I encourage you all to please complete the survey and help spread this survey to our Brother's and Sister's that may not have social media. Here is the link to the survey: [redacted]

Thank you so much for your participation in this study. And if you have any questions, please email me at [redacted]

Appendix B: CD-RISC Permission for Use



Jonathan Davidson, M.D. [redacted]
to me

Hello Chris:

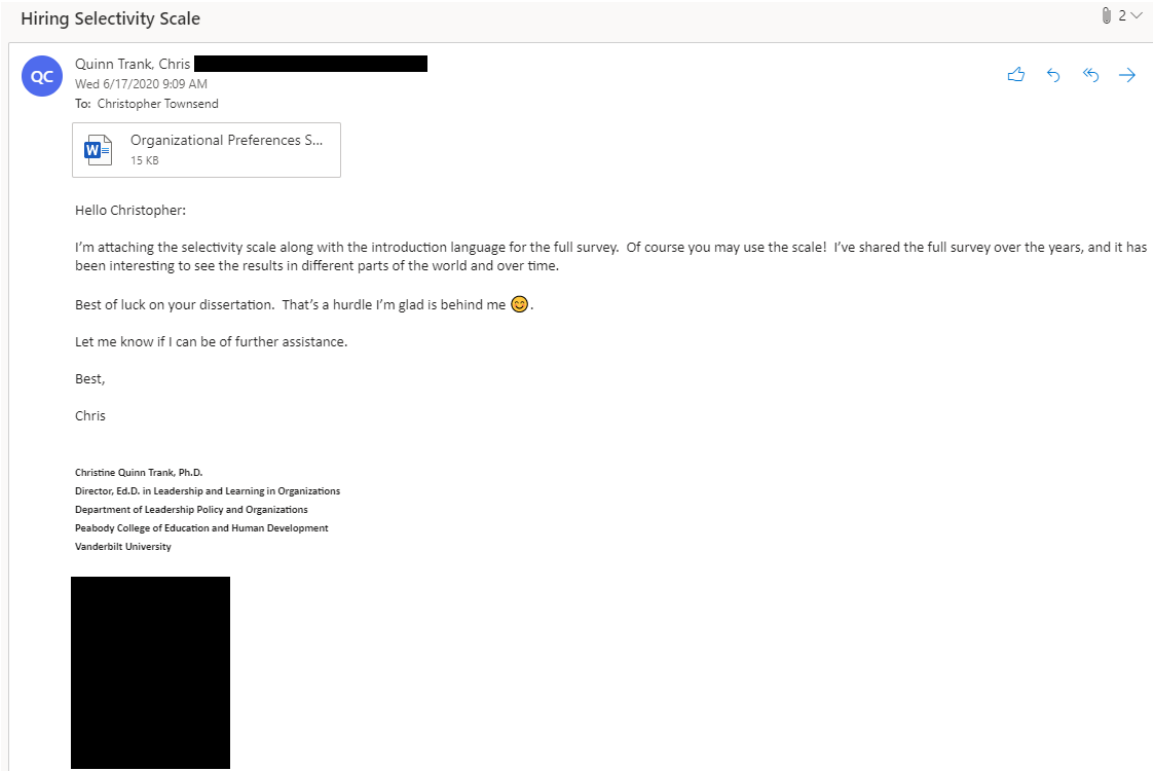
Thank you for your reply and payment. It is my pleasure to enclose the scale and manual. Please let me know if you have any questions.

Good wishes for success with your dissertation research,

Jonathan Davidson

From: Chris Townsend [redacted]
Sent: Tuesday, April 14, 2020 5:10 PM
[redacted]

Appendix C: Hiring Selectivity Scale Permission for Use



Hiring Selectivity Scale

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QC

Quinn Trank, Chris [redacted]
Wed 6/17/2020 9:09 AM
To: Christopher Townsend

Organizational Preferences S...
15 KB

Hello Christopher:

I'm attaching the selectivity scale along with the introduction language for the full survey. Of course you may use the scale! I've shared the full survey over the years, and it has been interesting to see the results in different parts of the world and over time.

Best of luck on your dissertation. That's a hurdle I'm glad is behind me 😉.

Let me know if I can be of further assistance.

Best,

Chris

Christine Quinn Trank, Ph.D.
Director, Ed.D. in Leadership and Learning in Organizations
Department of Leadership Policy and Organizations
Peabody College of Education and Human Development
Vanderbilt University

[redacted]

Appendix D: Informed Consent

Townsend Dissertation Study

Informed Consent Page 1

CONSENT FORM

You are invited to take part in a research study about the relationships among perceived team selectivity, team cohesion, and resiliency. The researcher is inviting current Active Duty, Guard, and Reserve United States Air Force Explosive Ordnance Disposal Operators in good standing to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Christopher Townsend, who is a doctoral student at Walden University. You might already know the researcher as an Explosive Ordnance Disposal Team Leader, but this study is separate from that role.

Background Information:

The purpose of this study is to better understand how the perceived selectivity of a team interacts with one's perception of their team cohesiveness as well as one's level of resiliency.

Procedures:

If you agree to be in this study, you will be asked to:

- **Take a short, one-time 10-15 minute survey.**
- **Not provide your name or any specifically identifiable information to protect your Anonymity.**

Here are some sample questions:

- **I am able to adapt when changes occur.**
- **Our team is united in trying to reach its goals for performance.**
- **My team is very selective about who it hires.**

Voluntary Nature of the Study:

This study is voluntary. You are free to accept or turn down the invitation. No one at the Air Force will treat you differently if you decide not to be in the study. If you decide to be in the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue or stress from looking at a computer screen. Being in this study would not pose risk to your safety or wellbeing.

1

The benefits for this study are to the Explosive Ordnance Disposal community and the Air Force. First, this study will provide an introspective look at the state of cohesion and resilience in the EOD community. Secondly, we may be able to use this study to further our understanding of what affects resilience and cohesion in order to one day be able to create interventions that help non-selective teams in the Air Force create a sense of belonging that may help foster cohesion and resilience.

Townsend Dissertation Study

Informed Consent Page 2

Payment:

There will be no payment offered for completion of the online survey.

Privacy:

Reports coming out of this study will not share the identities of individual participants. Details that might identify participants, such as the location of the study, also will not be shared. Even the researcher will not know who you are. The researcher will not use your personal information for any purpose outside of this research project. Data will be kept secure on a thumb drive that is password protected and kept in a locked personal safe when not in use. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email at [redacted] If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at [redacted] Walden University's approval number for this study is 09-21-20-0754845 expires on September 20th, 2021.

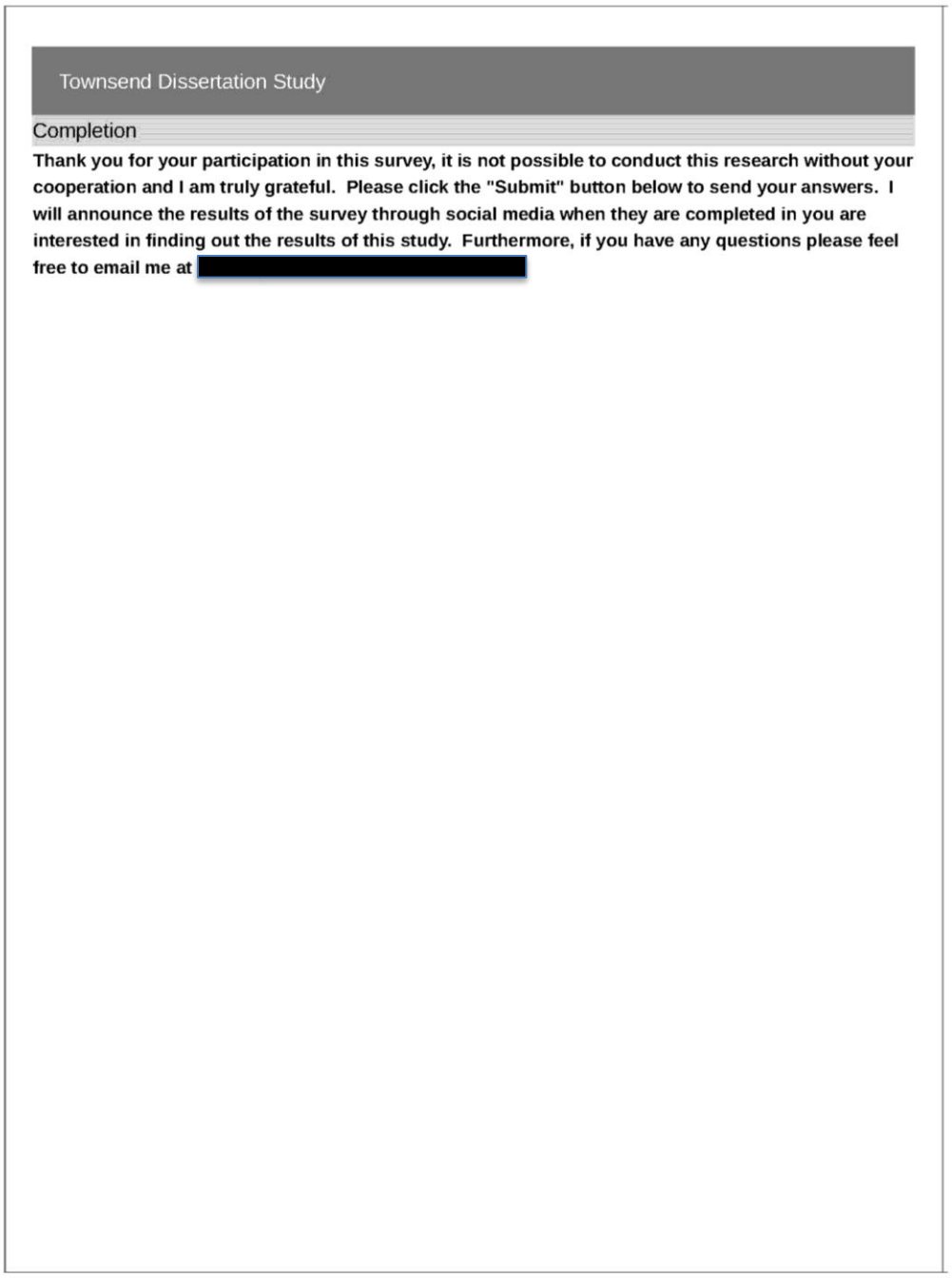
Please print or save this consent form for your records.

* 1. Obtaining Your Consent

If you feel you understand the study well enough to make a decision about it, please indicate your consent by clicking Yes to complete the questionnaire.

- ◯ Yes
- ◯ No

Appendix E: Survey Exit Page



Townsend Dissertation Study

Completion

Thank you for your participation in this survey, it is not possible to conduct this research without your cooperation and I am truly grateful. Please click the "Submit" button below to send your answers. I will announce the results of the survey through social media when they are completed in you are interested in finding out the results of this study. Furthermore, if you have any questions please feel free to email me at [redacted]