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Personal Initiative Differences between Combat Arms and Non-Combat Arms Field Grade Officers

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Walden University

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Walden University

College of Management and Technology

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Gregory M. Thomas

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Walden University
2021

Abstract

Personal Initiative Differences between Combat Arms and Non-Combat Arms Field

Grade Officers

by

Gregory M. Thomas

MA, Louisiana State University, 2005

BA, The Citadel, 1986

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
Management

Walden University

June 2021

Abstract

Senior U.S. Army leaders have indicated shortcomings in personal initiative (PI) among Army officers, especially between combat arms and non-combat arms field grade officers. PI is a critical contributor to individual and organizational effectiveness and to the Army's approach to command and control. However, the Army does not measure PI differences. This quantitative causal-comparative study involved an online, Self-Report Initiative Scale (SRIS) to measure PI. The target population was U.S. Army field grade officers attending resident Command and General Staff School between August 2020 and June 2021. The study used three research questions to address differences in PI scores between combat arms and non-combat arms U.S. Army officers; Army field grade officers and non-military, mid-level managers; and among four Army commission sources of Reserve Officer Training Corp (ROTC), U.S. Military Academy (USMA), Officer Candidate School (OCS), and direct commission. Results showed no difference in PI scores between combat and non-combat arms officers. However, Army officers had significant higher PI scores over non-military, mid-level managers. Additionally, ROTC commission officers had significantly higher PI scores over OCS and direct commission officers. This research indicates potential affirmative multi-echeloned social change opportunities. PI training is more cost effective than traditional training and offers potential savings for Army planners to better use for other defense programs. Objective performance criteria, such as PI, support increased diversity in Army organizations and improved individual functioning for Army leaders.

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Dedication

I dedicate this dissertation research study to my parents who tirelessly worked to ensure I always had everything I needed and encouraged me to constantly pursue my dreams. It is because of my parents' example, support, and love I was able to complete this work. I also want to dedicate this scholarly work as a symbol of never-ending pursuit of knowledge and perseverance for my children, Justin, and Emily.

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I would also like to acknowledge two members of the United States Army University for their support throughout my doctoral coursework and dissertation. First, Dr. Larry Wilson for teaching me how to write at the doctoral level and for his insightful feedback on the early draft of my dissertation. Second, Dr. Dale Spurlin for expertly guiding me through the Army's byzantine labyrinth of survey approval and for his timely support during data collection necessary for this study. I am deeply grateful to both of these professionals for their coaching and mentorship.

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Chapter 1: Introduction to the Study

Army Chief of Staff, General Mark Milley envisions America's next war as "a perfect harmony of intense violence" (Freedberg, 2018, para. 1). Current Army doctrine writers frame modern battlefield leadership requirements by emphasizing the criticality of initiative (Headquarters, 2019a). But, senior Army leaders are concerned the last two decades of counterinsurgency operations have eroded initiative in the force (Morris, 2018; Rempfer, 2019).

Field grade officers are an indispensable cohort of Army middle managers and leaders. Middle managers connect senior leader guidance to lower-level organizational action, and in the process, overcome internal and external obstacles (Alegbeleye & Kaufman, 2020; Glaser et al., 2016). While Army senior leaders recognize the importance of initiative in field grade officers it does not train, educate, or measure personal initiative (PI) in this group (Command and General Staff College, 2020a). In this study, I measured PI of field grade officers attending the U.S. Army Command and General Staff School (CGSS) and compared it to various civilian middle managers. I also compared PI among combat arms and non-combat arms officers and compared commissioning sources to levels of PI.

This research has implications for potential social change in organizational and individual effectiveness, diversity, and fiscal savings. Frese et al. (1997a) explained PI as a critical factor of organizational effectiveness and a developable attribute. Additionally, recently published U.S. Military Academy (USMA) research showed objective performance criteria, such as PI, supports increased diversity and improved functioning

(Hosie & Griswold, 2017). PI training is also more cost effective than traditional training (Campos et al., 2017). Thus, improved field grade officer PI offers potential savings, improved effectiveness, and increased organizational diversity for the U.S. Army.

In this chapter, I introduce PI behavior found from previous researchers. I also describe the problem and purpose statement. The research questions and hypotheses section will show the relations between independent and dependent variables. The theoretical section indicates the development of the PI concept. In this chapter, I also explain the research design and method, definitions, assumptions, limitations, and scope and delimitations. Finally, I summarize this research's significance.

Background of the Study

Action Regulation Theory (ART) is a broad theory set pertaining to industrial, work, and organizational applied psychology. The four basic concepts of ART are: sequence of action, hierarchal structure, foci of action, and action-oriented mental model (Zacher & Frese, 2018). Researchers in the last few decades have empirically examined ART in three main categories; areas of work-related learning, entrepreneurship, and proactive work behavior. Hirschi et al. (2019) help explain the relationship of ART and work-related learning. Recently, a large number of researchers on entrepreneurship have focused on emerging economies, especially in Africa (Nsereko et al., 2018). Frese et al. (1996) identified ART as a foundational concept of PI. Fay and Frese (2001) used proactive work behavior as a framework to further develop the concept of PI. Several features of PI align with the sequence of action aspect of ART (Zacher & Frese, 2018).

Researchers have investigated initiative from various psychology perspectives, individual performance, cognitive ability, environmental supports, orientation, and organizational effectiveness. Since the concept of PI was first introduced in 1996, most research literature has focused on three general themes. The first theme is antecedents or contributors to PI. Researchers have investigated how behavioral, leadership, organizational, and training/educational effects contribute to improved initiative (Song & Guo, 2020; Tekin & Akın, 2021). Performance, both individual and organizational, is the second theme and is the most researched area in the field of initiative (Glombik, 2020; Lisbona et al., 2018). Cost of initiative is a more recent area of investigation. Lastly, researchers have studied relationships between employee burnout, worker stress, and psychological well-being to PI (Searle, 2008). Numerous researchers concluded that PI will become increasingly important as organizations attempt to succeed in progressively more dynamic business environments (Fay & Frese, 2001; Grant & Ashford, 2008; Lebel et al., 2021).

Senior Army leaders also anticipate an increasingly dynamic operational environment in the near future. Army doctrine writers anticipate future operations in very complex environments against peer competitors requiring leaders to exercise increased levels of initiative (Headquarters, 2017d, 2019a). An important population of Army leaders are field grade officers, who are the Army's middle management and play a critical role in linking guidance from superiors to action by followers (Way et al., 2018). Middle managers link strategic vision to actual action (Glaser et al., 2016; Thomas et al., 2019). However, the U.S. Army does not train, educate, or measure PI in field grade

officers (Command and General Staff College, 2020a, 2020c). In this study, I attempted to show whether there are differences of PI between field grade officers and their civilian counterparts. Additionally, I compared PI among combat arms and non-combat arms officers as well as comparing commissioning sources to levels of PI.

Problem Statement

Army Chief of Staff General Mark Milley expects officers to disobey orders (Lopez, 2017). Milley directed Army senior leaders increase subordinate initiative by encouraging disciplined disobedience (Lopez, 2017). Milley's directive exposes a monumental lack of PI among Army field grade officers. Among the 500,000 soldiers educated each year, the Army's professional military education excludes PI related instruction (U.S. Department of the Army, 2018) which may cause national security failures. Current Army doctrine requires all leaders, regardless of specialty, to exercise initiative (Headquarters, 2019a). The general management problem was a pervasive shortcoming in PI among Army officers which negatively impacts organizational effectiveness.

Additionally, Army leader's anecdotal observations have suggested that combat arms officers display more initiative than non-combat arms officers. Differences in initiative between sub-groups, like combat and non-combat arms officers, affect overall performance and result in diminished organizational effectiveness and perceived differences in individual capabilities (Frese et al., 1996). Field grade officers provide an organizational link between senior and junior leaders and are essential to synchronizing organizational efforts (Abugre & Adebola, 2015). However, the Army has no previous

research on field grade officer PI. Thus, the specific management problem was that the American Army does not measure PI differences between combat arms and non-combat arms field grade officers. Understanding and enhancing initiative levels among field grade officers is critical to Army organizational effectiveness and national security.

Purpose of this Study

My purpose for this quantitative, causal-comparative study was to measure PI differences between combat arms and non-combat arms field grade officers. PI is a critical contributor to organizational effectiveness (Frese et al., 1996). Researchers have demonstrated PI is foundational to implementation of organizational change, innovation, and performance initiatives (Baer & Frese, 2003; Lisbona et al., 2020; Syal et al., 2020). I sought to advance scholarly knowledge holdings by measuring Army field grade officer PI and examining PI's relationship to the officer's commissioning source. This study's independent variables are officers commissioning source: United States Military Academy (USMA), Reserve Officer Training Corps (ROTC), Officer Candidate School (OCS), and direct commission. Dependent variables were PI scores of field grade officers, combat arms field grade officers, non-combat arms field grade officers, and non-military middle managers. If both combat arms and non-combat arms officers have low initiative scores, the lack of PI could be endemic to the entire officer corps and may signal a significant PI shortcoming across the entire Army.

Research Questions and Hypotheses

RQ 1: What are the differences in the overall PI score between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers?

H_01 : No significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers.

H_a1 : Significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers.

RQ 2: What differences exist, if any, in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School?

H_02 : No significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School.

H_a2 : Significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School.

RQ 3: What differences exist, if any, in PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School?

H_03 : No significant differences exist among PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School.

H_a3 : Significant differences exist among PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School.

I measured differences in overall PI score between field grade officers at the U. S. Army Command and General Staff School (CGSS) and non-military, mid-level managers. Average non-military mid-level manager PI scores were constructed from an average of five peer-reviewed studies over the last 8 years from four different countries. I also measured the difference in PI between combat arms and non-combat arms field grade officers at the U. S. Army CGSS. Finally, I also measured if there are relationships between PI and commissioning source of field grade officers at the U. S. Army CGSS.

The combat arms officer independent variable is an officer who understands combined arms doctrine, along with unit organization, and how to train units. The non-combat arms officer independent variable is an officer not required to demonstrate combined arms understanding. Commission source is an independent variable defined by where an officer obtains their commission, the USMA, ROTC, OCS, or direct commission. The Self-Report Initiative Scale (SRIS) survey score measured the dependent variable of PI.

Theoretical Foundation

This quantitative study's theoretical foundation is Frese's (1996) PI conceptualization. Frese investigated how personal work behavior enhanced individual and organizational effectiveness. Frese's seminal work established definitions, constructs, and behavior components of PI theory.

In 1995, East and West Germany were in the process of unification. Frese et al. (1996) observed there seemed to be a difference in initiative between East and West German workers. Through subsequent investigation, the researchers determined there

was a difference in initiative between the two groups of German workers. Frese and his team defined PI as an active work approach characterized by a self-starting, proactive, and persistent nature in overcoming barriers with a pro-organization orientation (Fay & Frese, 2001). To measure PI, Frese developed two approaches. First, a structured interview was used to determine qualitative work, general work, and education initiative. Second, the SRIS questionnaire was created to measure self-starting, proactive, and persistent behavior.

Frese's (1996) PI theory was built on Hacker's (1985) Action Regulation Theory (ART) which is a meta-theory that explains regulation of goal-directed behavior pertaining to industrial, work, and organizational applied psychology. The four basic concepts of ART are sequence of action, hierarchical structure, foci of action, and action-oriented mental model (Zacher & Frese, 2018). Researchers in the last few decades have empirically examined ART in work-related learning, entrepreneurship, and proactive work behavior (Hirschi et al., 2019; Nsereko et al., 2018). Frese et al. (1996) identified ART as a foundational concept of PI; proactive work behavior has been used to further develop the concept of PI (Fay & Frese, 2001), and several features of PI align with sequence of action aspect of ART (Zacher & Frese, 2018). PI's three aspects (self-starting, proactive, and persistent behavior) can be linked to sequence of action phases (Fay & Frese, 2001). The relationship between PI theory and ART is examined in greater detail in Chapter 2.

Frese's (1996) seminal research into initiative produced several foundational ideas and the SRIS that was used in this study. In Research Question 1, I compared PI

scores between U.S. Army field grade officers and middle level managers using the SRIS. For Research Question 2, I used data from the SRIS to measure PI differences between combat arms and non-combat arms officers. I again employed SRIS reported statistical data which enabled measuring PI differences of officers from four different commission sources for Research Question 3.

Nature of the Study

This study's nature was quantitative with a causal-comparative research design. Researchers using causal-comparative, or ex post facto research, try to ascertain the cause or significance of differences between pre-existing groups after an event. Causal-comparative research designs are appropriate when researchers cannot manipulate study variables (Brewer & Kuhn, 2010). Though cause-and-effect cannot be established, the design can reveal statistical relationships the independent and dependent variables (Kelly & Ilozor, 2019). Causal-comparative research infers cause and effect which makes it distinct from correlation research design (Çiçekoğlu et al., 2019). A causal-comparative design disadvantage is the measured relationship between independent and dependent variables may prove not to be causal. In fact, the relationship between an independent and dependent variable may result from a third, unexamined variable (Brewer & Kuhn, 2010). Schenker and Rumrill (2004) suggest causal-comparative designs contain categorical variables as independent variables and continuous variables as dependent variables.

A causal-comparative design was appropriate for this study, as I compared four independent variables and four dependent variables in an ex post facto setting. Officers

commissioning source was an independent variable (categorical). Dependent variables (continuous) were PI scores of field grade officers, combat arms field grade officers, non-combat arms field grade officers, and civilian small middle managers. Causal-comparative design leverage pre-existing groups to examine differences between those same groups against dependent variables (Schenker & Rumrill, 2004). My research effort employed random sampling techniques to select participants from the greater field grade officer population. Sample participants were drawn from resident officers/students attending the U.S. Army CGSS. A modified SRIS (Frese et al., 1997b) served as the study's measurement instrument.

Definitions

The following section defines and explains specific terms and variables used in this quantitative study.

Branch: A military service or Army specific officer grouping that commissions, trains, and develops officers. The Army contains 24 branches: infantry, armor, field artillery, air defense artillery, aviation, special forces, engineers, chemical corps, signal corps, military intelligence corps, military police corps, adjutant general's corps, finance corps, ordnance corps, quartermaster corps, transportation corps, judge advocate general's corps, chaplain corps, medical corps, medical service corps, dental corps, veterinary corps, army medical specialist corps, and army nurse corps (Headquarters, 2019g).

Combat arms officer: A U.S. Army officer required to have a broad understanding of combined arms doctrine, training, and force structure. The Army currently has seven

branches as combat arms officers: infantry, armor, field artillery, air defense artillery, aviation, special forces, and engineers (Headquarters, 2019g).

Command and General Staff College: Located at Fort Leavenworth Kansas, it is a regionally accredited, subordinate college of Army University that provides graduate level military education through four schools: the Command and General Staff School, the School for Advanced Military Studies, the School of Command Preparation, and the Army Management Staff College (Command and General Staff College, 2020a).

Command and General Staff Officers' Course: The Army's intermediate level professional military education course which credentials field grade officers. The in-resident course is conducted in three phases over 43 weeks with 899 in-class academic contact hours and a comprehensive oral board. The course goal is to prepare field grade officers to function successfully as organizational leaders and staff officers in extremely difficult operational conditions (Command and General Staff College, 2020a).

Command and General Staff School: The Army institute that oversees the Command and General Staff Officers' Course that trains and educates mid-level officers of the U.S. Army, all other American uniformed services, international partner countries, and representatives from various U.S. Government agencies (Command and General Staff College, 2020a).

Commission source: The U.S. Army appoints officers from four different commissioning sources: USMA, OCS, ROTC, and direct appointment of civilians (Headquarters, 2006).

Field grade officer: Officers in the rank of Major, Lieutenant Colonel, and Colonel with between 10 to 17 years' service (Headquarters, 2019c). Field grade officers are Army middle managers and supply a structural link between senior leaders and junior leaders. In this study, field grade officers refer to Majors and Lieutenant Colonels attending the Command and General Staff Officer's Course.

Non-combat arms officer: A U.S. Army officer who is not a combat arms officer grouped by technical specialty or skill which entails increased education, training, and experience. The Army contains 17 non-combat arms branches: chemical corps, signal corps, military intelligence corps, military police corps, adjutant general's corps, finance corps, ordnance corps, quartermaster corps, transportation corps, judge advocate general's corps, chaplain corps, medical corps, medical service corps, dental corps, veterinary corps, army medical specialist corps, and army nurse corps (Headquarters, 2019c).

Personal initiative: A work behavior measured by the amount of self-starting action, approach proactiveness, and persistence in overcoming obstacles while pursuing goals nested with the organization's mission (Frese et al., 1997a; Frese et al., 1996).

Professional military education: A progressive and sequential course series that furthers the development of essential military skills, attributes, and competencies (Headquarters, 2017e).

Self-Reported Initiative Scale (SRIS): A seven question self-assessment tool developed to measure PI differences between East and West German workers (Frese et al., 1997a; Hu et al., 2019)

Assumptions

This study was based on three assumptions. The first assumption was that all participants have experienced a work situation that provided an opportunity to exercise PI. This assumption presumed most Army field grade officers had successfully led small organizations of soldiers before attending CGSS (Headquarters, 2019g). This assumption was necessary to address all three research questions.

A second assumption was that individual participants surveyed would have diverse gender, ethnic, and cultural backgrounds. Diversity is an important American military attribute. Congressional researchers describe diversity impacting the areas of organizational cohesion, effectiveness, and social equality (see (Kamarck, 2019). The third assumption was that participants would provide honest questionnaire responses regarding their own PI. These last two assumptions were necessary to the study to enhance finding generalizability.

Frese et al. (1996) first identified PI as a behavioral syndrome in 1996. In the initial study, researchers developed the SRIS based on Bateman and Crant (1993) Proactive Personality Scale to measure recently reunited East and West German workers initiative differences. A logical link exists between measuring initiative differences in two different German worker groups and divergent U.S. Army officer groups. Because the SRIS was designed to measure PI differences among groups, it possesses robust construct validity and was the appropriate psychometric instrument for the investigation (Cook & Campbell, 1979). The SRIS measures all three main PI components: self-starting, proactive, and persistent, so it is content valid (Leedy & Ormrod, 2019).

Scope and Delimitations

In this quantitative causal-comparative study, I examined PI differences between US Army combat arms and non-combat arms field grade officers. The Army CGSS was a suitable locale to study field grade officer PI levels. Each year a centralized Army board of senior officers competitively identifies the top approximately 50% of newly selected Majors (867 for academic year 2021) to attend the resident CGSS (Headquarters, 2019e, 2019g). For 10 months each year, CGSS is the greatest concentration of Majors in the Army. As of this writing, no Army field grade officer PI related research has been attempted. The scope of this study was the under researched topic of PI of Army field grade officers. Academic year 2021 U.S. Army CGSS students served as the greater research population.

There were specific population boundaries for this study. Only Army officers attending resident CGSS were eligible survey participants. Excluded from the research were students attending the CGSS but who were not Army officers. The three groups of non-Army students attending the school were international officers, officers from different services (U.S. Marine Corps, U.S. Navy, U.S. Air Force, and U.S. Coast Guard), and interagency students (Department of Defense, Department of Homeland Security, Department of State, National Geo-Spatial Agency, and U.S. Agency for International Development).

External validity, or generalizability, refers to the extent results and conclusions can be utilized understanding other settings or context (Leedy & Ormrod, 2019). Replication in a different setting is a commonly used strategy to enhance generalizability.

Over the past 30 years multiple researchers have used the SRIS to measure and compare PI in different groups. In this study I measured PI in a different setting. For the first time, I measured PI differences between Army officer groupings.

Another important study delimitation was the data collection instrument. The SRIS used a Likert scale to measure responses to a series of questions on initiative. The Likert scale is an ordinal scale which enables a rank ordering of data (Costa et al., 2018). A Likert scale necessarily restricted participant responses which will limit research findings.

Limitations

A causal-comparative design has limitations mainly stemming from an inability of researchers to manipulate independent variables (Schenker & Rumrill, 2004). I examined limitations through internal, external, and construct validity. Establishing internal validity was difficult to demonstrate in this research because the independent variable of officers' commissioning source could not be manipulated. To counter threats to internal validity, I compared homogeneous subgroups - officer branches. Another threat to internal validity was confounding variables. A confounding variable is variable researchers cannot control or eliminate (Leedy & Ormrod, 2019). The most important confounding variable in this study was the amount of training/experience possessed by participants. I attempted to control for confounding variables by using a strategy to maintain consistency in some areas. The research population share several characteristics: generally, the same age, socioeconomic status, and education.

Further, because the SRIS was designed to measure PI differences among groups, it possesses robust construct validity and was the appropriate psychometric instrument for the investigation (Cook & Campbell, 1979). Frese et al. (1996) developed the SRIS based on Bateman and Crant's (1993) Proactive Personality Scale to measure initiative differences between recently reunited East and West German workers. The results from Fay and Frese's (2001) research indicated construct validity of the SRIS. The SRIS has also been used in numerous studies over the last three decades. Tornau and Frese (2013) performed a meta-analytic review on often researched proactivity concepts, including PI, and demonstrated SRIS to hold construct validity. Researchers in a more recent study (Starzyk & Sonnentag, 2019) reinforce SRIS construct validity claims. There was a logical link between measuring the differences in initiative between two different groups of German workers and two groups of U.S. Army officers.

Significance of the Study

Significance to Theory

My causal-comparative, quantitative study could potentially contribute to the underlying theoretical body of knowledge by measuring PI differences between combat arms and non-combat arms field grade officers. Based on my review of the literature, this is the first study to measure Army field grade officer PI. Circumstantial evidence indicated that combat arms officers display more self-starting, persistent, and proactive behaviors than non-combat arms officers. In contrast, non-combat arms officers are not required to synchronize combined arms (Headquarters, 2019g). High PI levels are needed in combined arms synchronization and measuring PI differences between combat arms

and non-combat arms may be the first step in improving Army organizational effectiveness (Campos et al., 2017).

Significance to Practice

The findings of this study may lead to an opportunity to transform Army functioning at multiple levels, from tactical battlefield operations to national policy. Field grade officers are the Army's middle managers and are an under-researched cognitive and behavioral domain among a critical Army leader cohort (Baer & Frese, 2003; Frese et al., 1997a). My study results may inform curriculum developers, trainers, and educators how to best improve future Army field grade officer developmental programs. With Army annual budgets in excess of \$181 Billion (U.S. Department of Defense, 2018) this research could result in significant taxpayer savings.

Significance to Social Change

This study also has potential for social change opportunities. Recently published USMA research showed that objective performance criteria, such as PI, supported increased diversity and improved functioning (Hosie & Griswold, 2017). The Army plans to spend \$196 million dollars on professional military education in 2020 (Congressional Budget Office, 2019) but PI training is more cost effective than traditional training (Campos et al., 2017). Thus, improved field grade officer PI offers potential savings better used for other government programs. Increased PI rates could improve U.S. Army operational effectiveness resulting in saved lives and money.

Summary and Transition

PI is a relatively new concept in individual and organizational performance fields. The purpose of my research was to measure and compare PI in field grade officers to other civilian middle managers, compare PI between combat arms and non-combat arms officers, and to compare PI to commissioning source. Hacker's (1985) ART and Frese's (1996) PI theory framed this study. I determined the best approach for this study was a quantitative causal-comparative. In Chapter 1 I included a study overview as well as a list of definitions, assumptions, scope and delimitations, and limitations. Finally, I briefly explained the study's significance of theory and the importance to improving PI in U.S. Army field grade officer and impacts on social change.

In the next chapter, I review the current literature relating to PI as well as the theoretical foundations for this research. Lastly, I perform an exhaustive current literature review, which includes studies related to the constructs and methodology. I review and synthesize studies related to the key independent and dependent variables and related to the research questions.

Chapter 2: Literature Review

U.S. Army field grade officers are the organizational link between senior and junior leaders and are indispensable in synchronizing organizational efforts (Abugre & Adebola, 2015). But, PI differences between combat and non-combat arms officers can affect overall performance, diminishing organizational effectiveness (Frese et al., 1996). The general management problem was a shortcoming in PI among Army officers (Lopez, 2017), which negatively impacts organizational effectiveness, and the specific management problem was that the American Army does not measure PI differences between combat arms and non-combat arms field grade officers. Understanding and enhancing initiative levels among field grade officers is critical to Army organizational effectiveness and national security.

I conducted this study to measure PI differences between combat arms and non-combat arms field grade officers. Researchers have demonstrated PI is crucial to organizational change, innovation, and performance initiatives (Baer & Frese, 2003; Hakanen et al., 2008; Hartog & Belschak, 2007; Las-Hayas et al., 2018). With this study, I sought to advance the PI body of knowledge by measuring Army field grade officer PI and examining PI's relationship to officer's branch and commissioning source. This chapter contains literature search strategy and PI theoretical foundation sections. The literature review is an exhaustive review of current PI literature and includes three main areas: PI antecedents, descriptions of research variables, and literature gap. Various subcategories will inform strengths and weakness inherent in each major literature area.

Literature Search Strategy

I located information that revealed issues concerning PI and U.S. Army field grade officers. This review contains material from various fields including management, psychology, education, leadership, organizational science, and U.S. Army doctrine. Search strategy sources encompassed books, peer-reviewed journal articles, army doctrine publications, magazines, government websites, and government reports. To find and retrieve information, I primarily used Walden's University Library, which enabled access to various subscription databases such as ProQuest and EBSCOhost. Additionally, I used Google Scholar for an expanded search of PI. Finally, I researched the Army Publishing Directorate, the Army's centralized publishing repository, to investigate field grade officers and Army doctrine. I employed numerous key terms and phrases to search various databases. Terms and phrases oriented on PI theory include personal initiative, action regulation, proactive work performance, and intrapreneurship. Additionally, I used terms focused on research variables including field grade officer, commission source, U.S. Army branch, combat arms, and non-combat arms.

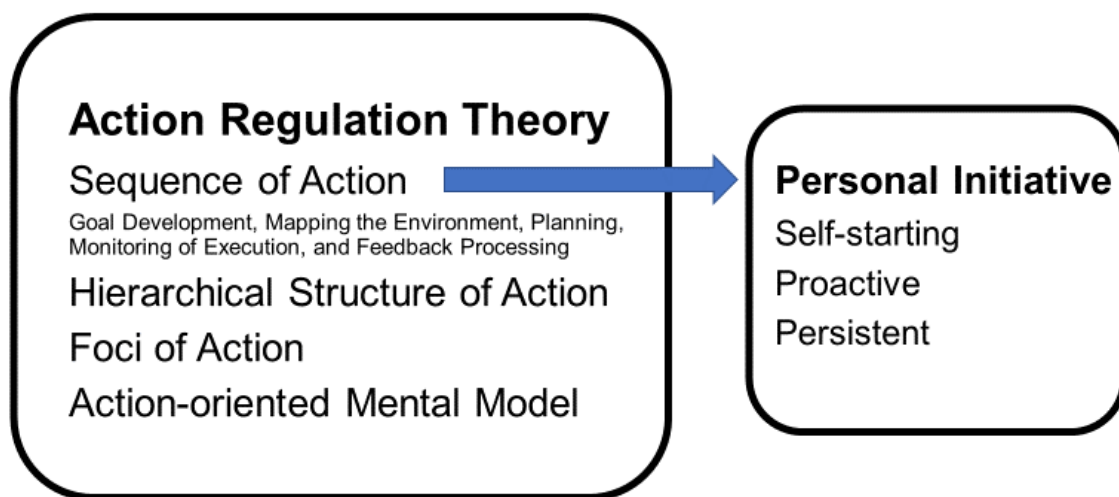
Theoretical Foundation

I selected Frese's foundational PI theory to frame this quantitative research. Frese's et al. (1996) PI theory is an extension of Hacker's (1985) ART, which is a meta-theory that explains regulation of goal-directed behavior. ART's four central concepts are sequence of action, hierarchical structure, foci of action, and the action-oriented mental model (Zacher & Frese, 2018). Sequence of action contains five phases: goal selection, orientation, planning, monitoring execution, and processing feedback (Frese, 2009). PI's

three behavioral aspects (self-starting, proactive, and persistent behavior) can be linked to these sequence of action phases (Zacher & Frese, 2018; see Figure 1). Further, sequence of action is an idealized sequence, not usually followed in a strict progression. Human activity is chaotic, which may require parties to disregard or move back and forth between phases. Sequence phases may be repeated if goals change. Additionally, sequence phases could occur simultaneously if there are multiple goals.

Figure 1

Relationship between Action Regulation Theory and Personal Initiative



Other researchers have used ART as a foundation to investigate proactive behavior (Bateman & Crant, 1993; Zacher et al., 2018), which is similar concept to PI. Proactive behavior is not PI. First, proactive behavior focuses on personalities which behave proactively. Second, proactive behavior is described as actions effecting change. PI theory builds on proactive behavior by focusing on proactive behavior instead of

personalities and includes the condition that proactive behavior must be anticipatory and positive for the organization (Grant & Ashford, 2008; Yang & Chau, 2016). Based on 1995 research in Germany, Frese defined PI as a proactive work approach characterized by self-starting, proactive, and persistent nature in overcoming barriers with a pro-organization orientation (Fay & Frese, 2001).

In 1995, East and West Germany were undergoing unification. Frese et al. (1996) observed initiative differences between East and West German workers. Through subsequent investigation, researchers concluded PI differences did in fact exist between the two German worker groups. Frese and his team defined PI as a pro-active work approach characterized by a self-starting, proactive, and persistent nature in overcoming barriers with a pro-organization orientation (Fay & Frese, 2001). To measure PI, Frese developed two approaches. First, structured interviews were used to determine qualitative work, general work, and education initiative. Second, the SRIS questionnaire was created to measure self-starting, proactive, and persistent behavior.

Building on the 1996 research, authors (Frese et al., 1997a) expanded their PI Theory analysis with additional research. A second round of research included two interrelated studies. First, using a longitudinal study with random interviews, investigators examined 543 participants from a mid-sized former East German town. Second, researchers employed a cross-sectional study and interviewed 160 participants in a mid-sized former West German town. Results from this second round of research enabled researchers to refine definitions, constructs, and behavior components of PI.

One of the most important results from the combined research showed construct validity between PI interview questions and measurement scales for measuring PI. A second important research outcome was a codified PI standard definition which is still used in the research field. Frese and his team explained PI as an active work behavior measured by amount of self-starting action, approach proactiveness, and persistence in overcoming obstacles while pursuing goals nested with the organization's mission (Frese et al., 1997a; Frese et al., 1996).

Self-starting means an employee performs a task beyond assigned duties and without being explicitly told by a supervisor (Frese & Fay, 2001; Redfern et al., 2010). Self-starting employees establish and pursue self-selected goals in addition to assigned goals. Often time's initiative pertains to sub-problems of an assigned task or problems not apparently related to the task. Self-starting, or extra-role behavior, highlights the difference between PI and other active behaviors such as self-directed learning or organizational citizenship behavior (OCB) (Frese & Fay, 2001; Wollny et al., 2016).

Proactivity is an anticipatory and long-term focus on work (Andresen et al., 2020; Frese & Fay, 2001; Horstmann, 2018). Grant and Ashford (2008) explain proactive work behavior as an anticipatory process taken by workers to influence themselves and or their environment. A proactive process includes three phases anticipation, planning, and action directed toward future impact. Proactive behavior is critical for middle managers, such as Army field grade officers. Middle managers are critical organizational links who proactively recognize new opportunities at lower levels and affect initiatives directed

from higher managers while overcoming obstacles (Glaser et al., 2016; Groskovs & Ulhøi, 2019).

Finally, employees exercising initiative generally require persistence to achieve their goal. Workers normally leverage persistence and demonstrate PI when overcoming organizational change related to failures and delays. Persistence is required to overcome organizational barriers as well as other people's resistance, and occasionally, persistence is needed in dealing with supervisors who resist employees exceeding job boundaries (Frese & Fay, 2001). Persistence is a great challenge for middle managers who must balance higher leader expectations with follower perceptions (Way et al., 2018).

Frese's (1996) original research provided a theoretical model from which to view my study. First, Frese initiated his investigation based on anecdotal observations of PI differences between formerly East and West German workers. Second, he compared PI scores between two sub-groups of a larger main group, again East and West German workers. Lastly, Frese used the SRIS to measure PI differences between two groups of participants.

Frese's (1996) seminal research into initiative produced several foundational ideas and led to the SRIS which was essential to this study. In Research Question 1, I compared PI scores among U.S. Army field grade officers and middle level managers using the SRIS. For Research Question 2, I utilized SRIS data to measure PI differences between combat arms and non-combat arms officers. Finally, I used SRIS reported statistical data to enable Research Question 3 by measuring PI differences among officers from four different commissioning sources.

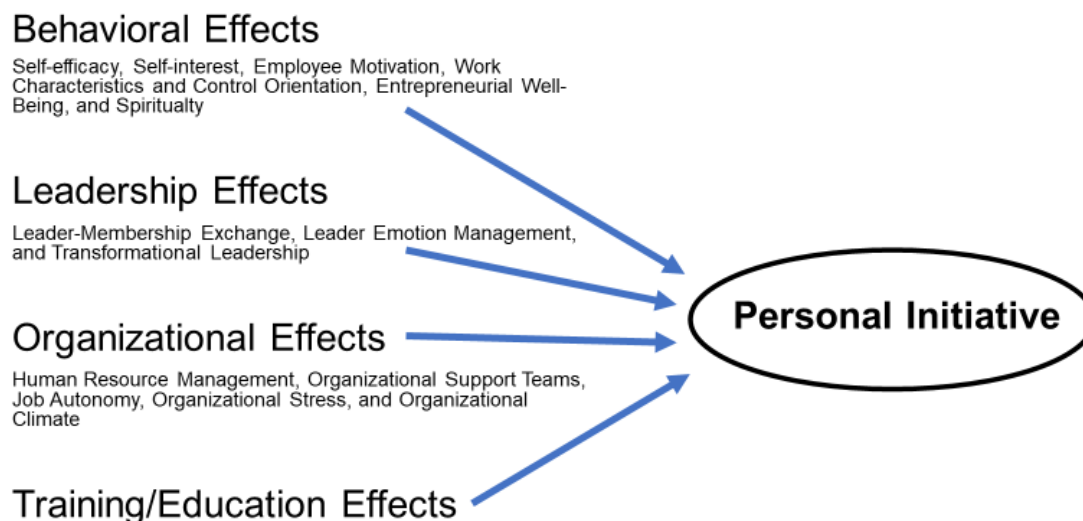
Literature Review

Modern workplace complexity and speed requires agile and adaptive workers (Hakanen et al., 2008). Modern organizations, especially competitive organizations like businesses and military organizations, also emphasize employee initiative (Frese & Fay, 2001; Headquarters, 2019a). PI Theory evolved from initial research comparing work performance between former East and West Germany workers (Frese et al., 1996). Since Frese's initial study, researchers have demonstrated PI as a critical aspect of enhanced individual and organizational effectiveness (Frese & Fay, 2001; Rooks et al., 2016).

PI theory is a relatively new idea in which researchers attempt to explain individual work behavior. Since Frese's et al. (1996) first investigation, there have been less than 100 peer reviewed articles and book chapters authored documenting PI research. Past PI research efforts fall into two main categories, PI antecedents and PI effects. Because my study's research questions deal with PI antecedents, most of my literature review focused on various aspects of PI antecedents.

PI Antecedents

There are numerous antecedents, or precursors, to PI behavior. Most research into PI over the last quarter century has focused on PI antecedents, falling into roughly four areas: behavioral effects on PI, leadership effects on PI, organizational effects on PI, and training/educational effects on PI (see Figure 2). Understanding PI antecedents was important for this study. Understanding PI antecedents was important for this study and informed Research Question 3.

Figure 2*Primary Research Areas of PI Antecedents**Behavioral effects on PI*

Several important work behaviors act as antecedents for PI. Self-efficacy, self-interest, employee motivation, work characteristics and control orientation, and spirituality can all contribute to PI (Aksoy & Mamatoğlu, 2020; Anggraeni, 2020; De Dreu & Nauta, 2009; Lisbona et al., 2018; Whitaker & Westerman, 2014). Self-efficacy is a belief in the ability to perform necessary actions to deal with situations or to be successful in life events (ÇAm et al., 2020). Speier and Frese (1997) performed a two-year, four wave longitudinal study ($n = 463$ to 543) using semi-structured interviews and a questionnaire to examine self-efficacy, work control, and PI. Work control, employee perspective of control and complexity of work, was measured using a self-reported scale (Semmer, 1984). The authors developed a new scale to measure self-efficacy, with

Cronbach's alphas .68 (t3) and .67 (t4). PI was measured through two main factors during interviews, past and current initiative. Through multiple regressions, the researchers' demonstrated self-efficacy was a mediator and moderator between work control and PI.

Other researchers directly link self-efficacy and work engagement to PI's three components. Lisbona et al., (2018) conducted two studies. Study 1 was cross-sectional ($n = 396$) from 22 organizations. Study 2 was two-wave longitudinal ($n = 118$) from 15 organizations. Participants from both studies did not overlap. Researchers measured self-efficacy with a self-reporting scale (Jones, 1986). Work engagement was measured with Utrecht WE Scale (UWES: Schaufeli et al., 2002). PI was measured using SRIS (Frese et al., 1997b). The authors developed a three-item scale to measure performance. Results showed work engagement and self-efficacy were important PI antecedents. Results also indicated employees with self-efficacy believe in their own competency to act in a self-starting manner for workplace change. Workers with self-efficacy also acted more proactively to change conditions. Lastly, self-efficacy encouraged a greater degree of persistence. The authors also found work engagement and PI were correlated constructs but did not overlap.

One investigator (Solesvik, 2017) examined how PI mediated self-efficacy and entrepreneurial intentions between one emerging economy (Ukraine) and one developed economy (Norway). The author surveyed bachelor and master's students from Norway ($n = 111$) and Ukraine ($n = 243$). Self-efficacy, PI, entrepreneurial experience, and entrepreneurial intentions were measured with responses using a modified 5-point Likert scale. PI was measured using SRIS (Frese et al., 1997b). Results from multiple

regressions showed PI fully mediated the relation between self-efficacy and entrepreneurial intentions. Results also indicated levels of self-efficacy significantly higher in Ukrainian students (an emerging economy). Research showed no significant difference in PI scores between Ukrainian and Norwegian students. This study, researchers highlight again self-efficacy is an important PI antecedent.

Self-interest is another PI antecedent. Self-interest is someone looking out for ones' own interest or well-being (Farmer, 2019). De Dreu and Nauta (2009) used self-concern and other-orientation as moderators hypothesis to combine three Dutch studies to examine job performance and PI. The researchers surveyed employee/employer dyads ($n = 401$ dyads) across different industries in two studies using a Likert-type scale survey. Survey questions assessed the degree which respondents valued self-concern, others orientation, feedback, skill variety, job autonomy, and job performance (supervisors only). Using moderated multiple regressions, the authors found skill variety ($p < .05$) and job autonomy ($p < .05$) were better predictors of job performance in employees with high self-concern. No variables interacted on a significant level ($p > .10$) with others orientation to predict job performance. Their third study included perceived justice climate as a variable rather than job performance, since only employees were surveyed ($n = 854$) rather than employer/employee dyads. As with the first two studies, job autonomy and skill variety were positively related to PI ($p < .025$) although time on task for employees moderated effect with longer time on task corresponding to lower PI. Perceived justice climate only related to others orientation ($p < .05$). The authors concluded self-concern influenced the relationship between individual attributes, job

performance, and PI, but other orientation had no influence on other variables.

Employees motivated by self-concern appeared to perform better when supervisors provided them autonomy within a variety of tasks. Research Question 2 will explore how principal occupation of participants (combat arms vs. non-combat arms) with its variability in perceived autonomy and duty variety interacts with PI.

Chiaburu and Carpenter (2013) examined how employee motivation to get ahead (status striving) and to get along (communion striving) predicted proactive work behavior and are significant PI antecedents. Researchers used an online survey ($n = 165$) to measure status striving, communion striving and PI. Using moderated multiple regressions, the researchers identified status striving ($p < .01$) was positively related to PI and communion striving ($p < .05$) was negatively related to PI. Also, status and communion striving interacted ($p < .05$) to predict PI. Most importantly, the authors ascertained highest employee PI came from ones scoring high in both status and communion striving. The relationship between scoring high in status and communion striving and highest employee PI indicated a need for balance between the two behaviors to maximize initiative.

Work characteristics and control orientation are important PI antecedents. Work characteristics directly affect control orientation and control orientation affects PI. Work characteristics contain two aspects: employee control and job complexity. Control orientation consists of employee control aspirations, perceived opportunity for control, and self-efficacy (Frese et al., 2007). The authors performed a five-year, six-wave longitudinal study of German workers ($n = 268$ to 665) to study if work characteristics

had a mediating effect on control orientation, and control orientation had a significant effect on worker PI. Results from multiple regressions showed work characteristics affected control orientation ($p < .05$) and control orientation had a significant effect on PI ($p < .05$). Additionally, control orientation mediated effect of work characteristics on PI ($p < .05$). Due to its size and length, Frese's research is an important milestone to the PI field. Lastly, researchers reinforced the significance of work characteristics and control orientation as PI antecedents.

Entrepreneurial well-being is another crucial PI antecedent. Entrepreneurial well-being is described as psychological satisfaction and positive affect of starting and maintaining an entrepreneurial enterprise (Wiklund et al., 2019). Hahn et al., (2012) performed a two-wave, two-year survey of German business owners ($n = 122$) to measure the link between entrepreneurial well-being (life satisfaction and vigor) to PI. Life satisfaction was measured using a five-item satisfaction scale (Pavot & Diener, 1993) with a Cronbach's alpha of .85. Vigor was measured with a seven-item scale (Ryan & Frederick, 1997) with a Cronbach's alpha of .88. Researchers used SRIS (Frese et al., 1997b) to measure PI, with a Cronbach's alpha of .85. Hierarchical multiple linear regression analysis showed only vigor was a significant positive predictor ($\beta = .25$; $p < .05$) to PI. The authors' findings support the idea antecedents, in this case vigor of entrepreneurial well-being, impact PI.

Wang and Lie (2015) investigated how curiosity related to PI and if PI mediated psychological well-being and emotional exhaustion. The authors explained curiosity as a mental state where people identify and explore novel information which require their

consideration. Researchers surveyed online respondents ($n = 380$) in China to measure curiosity, PI, psychological well-being, and emotional exhaustion. Curiosity was measured using the International Personality Item Pool (Goldberg et al., 2006) which had a Cronbach's alpha of .87. PI was measured using SRIS (Frese et al., 1997b) which had a Cronbach's alpha of .91. Results indicated a significant positive relationship ($\beta = .76, p < .01$) between curiosity and PI. Results also showed significant positive relationships between PI and psychological well-being and emotional exhaustion. This study underlies the importance of curiosity as a PI antecedent; however, data collection from a single sample limits findings generalizability.

Spirituality and values are linked to PI. Whitaker and Westerman (2014) examined how integrating spirituality and psychological empowerment constructs could act as important antecedents and explain improved PI. Researchers surveyed MBA students from a mid-sized, midwestern American university and their supervisors ($n = 150$ dyads) to examine spirituality, values alignment, psychological empowerment, and PI. All participants worked part time jobs (at least 25 h/week) and consented to investigators contacting their supervisors. The authors employed multiple regressions and found spirituality ($p < 0.91$) and values alignment ($p < 0.84$) denote important PI antecedents. Research indicated psychological empowerment ($p < 0.88$) a significant intermediary between PI ($p < 0.86$) and spirituality and alignment.

Leadership Effects on PI

Leadership effects have an important role as a PI antecedent. Before becoming field grade officers, many Army officers serve as company commanders. Army

companies consist of about 100 soldiers and thousands of dollars' worth of equipment (Headquarters, 2017b). Army company commanders are equivalent to small entrepreneurs because they lead, manage, budget, and train their organization. Upon promotion to field grade ranks, officers serve as senior staff officers performing as middle managers. Field grade officers combine organizational leadership approaches with previously developed entrepreneurial skills (Headquarters, 2021b). Similarity between field grade officers and middle managers is important, because in Research Question 1 I measured PI differences among field grade officers and civilian middle managers.

Leader-membership exchange is the degree of reciprocal social exchange between supervisor and follower and typified by high levels of respect, communication, and trust (Mostafa & El-Motalib, 2019; Zhao et al., 2019). Khalili (2018) investigated how leader-membership exchange affects employee PI and subsequently creativity and innovation by surveying business employees ($n = 1,221$) from all eight Australian states. Leader-member exchange was measured using a seven-item scale (Graen & Uhl-Bien, 1995) with Cronbach's alpha of .82. PI was measured using SRIS (Frese et al., 1997b) with Cronbach's alpha of .74. Researchers used an existing scale (George & Zhou, 2001) to measure creativity with a Cronbach's alpha of .80. Innovation was measured using an instrument developed by De Jong and Den Hartog (2010) with a Cronbach's alpha of .79. Through structural equation modeling, researchers showed significant positive relationships between leader-membership exchange and employee creativity ($\beta = .61, p < .001$) and innovation ($\beta = .42, p < .001$). Results also indicate a significant relationship between LMX and PI ($\beta = .35, p < .001$). This research determined employee perceived

leader-membership exchange quality significantly impacted employee PI, which then increased creativity and innovation.

A similar study examined leader emotion management, affective well-being, and PI. Schraub et al. (2014) surveyed 59 German business teams ($n = 300$) three times over two weeks. Leader emotion management was measured with Workgroup Emotional Intelligence Profile (Jordan & Lawrence, 2009) with a Cronbach's alpha of .90. Team conflicts were measured using a four-item scale (Jehn, 1995) with a Cronbach's alpha of .87. Affective well-being was measured with the Job-related Affective Well-Being Scale (Van Katwyk et al., 2000) with a Cronbach's alpha of .84. Researchers measured PI with SRIS (Frese et al., 1997b) with a Cronbach's alpha of .89. Multi-level analysis showed leader emotion management positively affected PI ($\beta = .25, p < .01$) and was partly mediated by affective well-being. However, researchers showed intra-team conflict constituted a negative work event and impacted team member well-being. The authors' findings reinforce the perception leadership is an important PI antecedent.

A significant PI antecedent is transformational leadership. Transformational leadership is an ability to identify necessary change, motivate followers for the good of the organization to higher performance levels, and positively influence the organization's command climate (Farahnak et al., 2020). Kuonath et al., (2017) performed a five consecutive day on-line diary study of German workers ($n = 97$). Day-level PI was measured with SRIS (Frese et al., 1997b) with Cronbach's alpha of .84. Day-level transformational leadership was measured with the Multifactor Leadership Questionnaire (Bass & Avolio, 1996) with a Cronbach's alpha of .92. Using two-level hierarchical

linear modelling, the authors revealed significant positive correlation between day-specific transformational leadership and employee PI on the same day. This research underlines the importance of leadership as a PI antecedent.

Likewise, Schmitt et al., (2016) considered if transformational leadership relates to work engagement and subsequently impacts PI. The authors surveyed Dutch workers and their colleagues ($n = 148$ dyads) with separate instruments. Transformational leadership, work engagement, and job strain were measured with an employee survey. Voice, PI, and core job performance were measured with a colleague survey. Hierarchical regression analysis showed a positive relationship among transformational leadership and PI ($\beta = .31, p < .01$) and voice ($\beta = .32, p < .01$). Additionally, transformational leadership was positively related to work engagement ($\beta = .37, p < .01$). Lastly, work engagement was positively related to core job performance ($\beta = .22, p < .01$). These findings show the significance of transformational leadership as a PI antecedent.

Another study examined if PI and job control played a moderating role between transformational leadership and innovation adoption (Zappalà & Toscano, 2019). Researchers surveyed nurses, doctors, auxiliary, and technical personnel ($n = 137$) in an Italian hospital. The authors measured transformational leadership, job control, PI, and innovation adoption. PI was measured using SRIS (Frese et al., 1997b) with a Cronbach's alpha .93. Job control was assessed with Cenni and Barbieri's (1997) Job Content Questionnaire with a Cronbach's alpha of .83. Transformational leadership was measured with the Multifactor Leadership Questionnaire (Bass & Avolio, 1996) with a Cronbach's alpha of .88. Using multiple regressions, researchers demonstrated PI and job control

predicted innovative behaviors. However, the authors explained transformational leadership did not predict innovation adoption. This study reinforces the importance of PI to individual performance (innovation adoption) but did not confirm transformational leadership as a PI antecedent.

Herrmann and Felfe (2014) examined if PI and task novelty acted as moderators between leadership approaches and employee creativity. Participants ($n = 241$) were German university students. Class instructors role-played supervisor roles in a fictitious company. Participants, acted as new company trainees, were provided situations which examined leadership and task novelty conditions. Researchers measured leadership using the Multifactor Leadership Questionnaire (Bass & Avolio, 1996). Leadership was a dummy variable with 1 coded for transactional and 2 for transformational leadership. PI was measured using SRIS (Frese et al., 1997b) with a Cronbach's alpha of .70. Task novelty was a dummy variable with 1 representing low task novelty and 2 being high task novelty. Creativity was measured using four expert judges to rate quality and quantity. The authors showed transformational leadership enabled higher levels of creativity and task novelty. Researchers also indicated transformational leadership had a higher impact on employees with high PI than employees with low PI.

U.S. Army leadership doctrine writers do not establish a preference for a single leadership approach. Army doctrine authors do reference a change management process in which transformational leadership serves as a catalyst (Headquarters, 2019c). Army leadership doctrine writers appear to possess an inherit bias towards transformational leadership. Research indicates transformational leaders seem to get higher levels of PI

from workers, which leads to higher qualitative and quantitative creativity (Herrmann & Felfe, 2014). Previous paragraphs highlight transformational leadership approach is a significant PI antecedent. Leadership approach may be a contributing factor to Research Question 1, in which I measured PI differences between field grade officers and civilian middle managers.

Organizational Effects on PI

Organizational effects are an important PI antecedent. Organizational effects are a spectrum of influences in which organizations prompt PI. Organizational effects include: how human resource management systems relate to workers, effectiveness of organizational support teams, organizational climate, job autonomy and work stressors (Li et al., 2021).

Cemberci and Civelik (2018) surveyed employees of a prominent Turkish logistics company to measure if organizational support influences team member PI and worker creativity. Organizational support refers to team working concept and is a product of support from top management. Senior managers enable positive organizational support through encouraging activities, informal meetings, fault tolerance, rewarding innovation, developing teams for future projects, and avoiding paperwork. PI was measured using SRIS (Frese et al., 1997b). Organizational support was measured with a scale 5-point scale (Levi & Slem, 1995). Creativity was measured with a 5-point scale (Zhou & George, 2001). The authors explained composite reliability and Cronbach's alpha were close or beyond threshold level (i.e. 0.7). Structural equation modeling showed a positive and significant relationship between organizational support and creativity (Beta = .358, p

< .05), and between organizational support and PI (Beta = .308. $p < .05$). This study reinforces organizational support is an important PI antecedent.

Another group of researchers (Hong et al., 2016) examined how human resource management affected proactive behavior in a multi-level (establishment, department, and individual levels) organization. The authors surveyed 22 hotels of an international chain located in Europe, Asia, Australia, and America in two waves from three data sources ($n = 664$ employees, 260 supervisors). Individual-level surveys measured proactive motivational states and PI. Department-level surveys measured initiative climate and leadership. Establishment-level surveys measured initiative-enhancing human resource management systems (selection, training, performance evaluation, and rewards). Through multiple regressions, researchers surmised establishment level initiative enhancing human resource management systems improved departmental initiative climate ($\gamma = .54$, $p < .01$) which in turn improved individual level PI ($\beta = .07$, $p < .001$). Results did not show support that department-level empowering leadership positively related to department-level initiative climate. Author's findings highlight organizational effect importance on worker PI and the significance mid-level managers play in initiative climate and individual PI.

Baer and Frese (2003) described PI climate as formal and informal practices and procedures used in organizations to enable proactive, self-starting, and persistent work approach. Lopez-Cabarcos et al. (2015) examined one aspect of PI climate, organizational justice. The authors described organizational justice as how workers evaluate organizational behavior and subsequent employee attitude. The authors also

investigated if affective commitment, a connection between worker and organization, acted as a mediator between organizational justice and PI. Investigators surveyed hotel employees ($n = 321$) in northern Portugal to measure organizational justice, affective commitment, and PI. Organizational justice was measured with a scale developed by Rego (2000). Affective commitment was measured with a five-item scale (Meyer & Allen, 1997). PI was measured with a modified scale (Rego, 2000). Using maximum likelihood estimation and bootstrapping technique, results indicated affective commitment fully mediated the relationship between organizational justice ($\beta = .62, p < .001$) and PI ($\beta = .53, p < .001$). However, results showed no direct relationship between organizational justice and PI ($\beta = -0.12, ns$). The author's findings emphasize organizational climate, specifically affective commitment, as an important PI antecedent. The authors also highlight organizational justice is not a significant PI antecedent.

In a large research effort, Wihler et al. (2017) performed three related studies which examined how initiative climate interacts with social astuteness to act as an PI antecedent that in turn influences political skill and job performance in German employees and supervisors. The authors use online questionnaires to measure climate of initiative, political skill, social astuteness, networking ability, apparent sincerity, and PI. In Study 1, researchers investigated relationships between initiative climate, astuteness, and PI between employees and supervisors ($n = 175$ dyads). For Study 2, the authors examined relationships between PI, political skill, and job performance between employees and supervisors ($n = 143$ dyads). Study 3 saw investigators consider all five variables of Studies 1 and 2 between employees, coworkers, and supervisors ($n = 219$

triples). Researchers used confirmatory factor analysis to assess data. Results demonstrated comparative fit index ranged between .875 to .984, root-mean-square-error of approximation between .053 to .132, and standardized-root-mean-squared-residual ranged between .028 to .074. Overall results show, climate positively interacts with astuteness to positively influence PI. PI then interacts with political skill and predicts positive supervisor assessments. These author's research effort reinforces antecedents like organizational climate and social astuteness are important PI antecedents.

Yang and Zhao (2018) investigated if PI mediated job autonomy effect on psychological well-being. Job autonomy is the amount of worker independence an organization encourages in regular work performance. Researchers collected data from respondents ($n = 380$) from Shanghai using an online survey. PI was measured using SRIS (Frese et al., 1997b) which had a Cronbach's alpha of .91. Job autonomy was measured with a self-reporting scale (Frese et al., 1996) with a Cronbach's alpha of .87. Using confirmatory factor analysis, the authors found a positive effect between high job autonomy and psychological well-being ($r = .65, p < .001$). Additional findings show a positive relationship between job autonomy and PI ($r = .56, p < .001$), and PI and psychological well-being ($r = .55, p < .001$). This study underscores organizational effects, like job autonomy, are an important PI antecedent.

Empowerment and obligation are important PI antecedents (Wikhamn & Selart, 2019). The authors explained psychological empowerment as one's belief in their ability to gather motivation, cognitive resources, and courses of action to exert control of particular events. Obligation was described as, once organizations supply required

resources, a worker's feeling to aid in organization success. Researchers used a web-based survey of employees ($n = 402$) from a Swedish multi-national corporation to collect data. Empowerment was measured using four dimensions, meaningfulness, self-determination, impact, and competence. PI was measured using SRIS (Frese et al., 1997b) which had a Cronbach's alpha of .88. Eisenberger's felt obligation scale (Eisenberger et al., 2001) was used to measure obligation (Cronbach's alpha of 0.86). Bivariate correlation showed empowerment relates statistically positively to PI ($\beta = 0.58$, $p < 0.001$). Results also indicated felt obligation mediated the relationship between empowerment and PI. Authors of this study confirmed organizational enabled employee empowerment as a significant PI antecedent.

Other researchers (Hakanen et al., 2008) also explored if organizational effects impact PI. Investigators examined if job resources improved work engagement and if work engagement enhanced PI. Researchers also measured if PI improved work-unit innovativeness. A two-wave, three-year longitudinal study surveyed Finnish dentists ($n = 2,555$). Job resources were described as physical, psychological, social, or organizational features of work which may lessen negative effects and expand work goal achievement along increasing personal growth. Work engagement was explained as an affirmative work-related attitude. A cross-lagged panel study showed positive and reciprocal associations between job resources and work engagement and between work engagement and PI. Also, PI helped increase work-unit innovation. This research shows the significance of organizational effects on PI.

Fay and Sonnentag (2002) investigated how organizational stress impacted PI. The authors explained organizational stressors as workplace signals which indicate a process, procedure, or design is suboptimal. Researchers conducted a six-wave, four-year longitudinal study ($n = 478$ to 543). Structured interviews and questionnaires were employed to measure PI and stressors. Hierarchical regression analysis results showed organizational stressors were positively related to increased PI. The authors explained stressor-PI relationship was due to the fact workers look to reduce stress in the moment and act to prevent future stress. Actions to prevent stress nest with the three aspects of PI work behavior (self-starting, proactive, and persistent in over-coming obstacles). This study reinforces the importance of organizational effects as a PI antecedent.

Training Effects on PI

PI training is a relatively new approach to enhancing entrepreneurial activity and proactive behavior. Training is grounded in PI literature and ART. Large field studies make up most of the research in training effects on PI (Gorostiaga et al., 2018; Yalçinkaya et al., 2021).

In one important study (Glaub et al., 2015), investigators conducted a three-day randomized field intervention for 100 Ugandan small business owners. Researchers collected data in four waves over 12 months through semi-structured interviews and questionnaires in a pre-test/post-test design with a randomized waiting control group. The authors measured: satisfaction with training, PI knowledge, success (sales level, number of employees, failure rate, and overall success index) and measurement of PI (initiative behavior, initiative for product/marketing, and overcoming barriers). Satisfaction was

measured using qualitative statements with a mean 2.91 (from a range of -3 to 3). A univariate analysis of variance (ANOVA) showed increase in PI knowledge (T1: $M = 2.15$, $SD = .93$; T2: $M = 3.06$, $SD = .70$). An univariate analysis of covariance showed significant interaction effects in PI behavior ($\eta^2 = .25$ -.50) as well as increased success ($t = 7.20$, $p < .01$, $\eta^2 = .25$). Mediation analysis and bootstrapping analysis showed significant mediation effect of PI ($p < .05$). Results showed training increased all three facets of PI: self-starting, proactive, and persistent work behavior over a 12-month period. Additionally, researchers showed increased PI enabled increased entrepreneurial success. This study is a significant contribution to the field of PI and underscores training as an important PI antecedent.

A similar study was performed with German entrepreneurs (Frese et al., 2016). Researchers conducted a three-day training event with small business owners ($n = 36$) with a random non-equivalent comparison group ($n = 97$). Researchers collected data in three waves over 12 months through semi-structured interviews and questionnaires in a pre-test/post-test design. The authors measured: satisfaction with training, learning (goal setting, PI, time management, and innovation), behavior (PI implementation), and success (growth in number of employees). Satisfaction was measured using qualitative statements with a mean 1.5 (from a range of -3 to 3). A multivariate analysis of variance showed increase in learning (Wilks-Lambda $F = 150.15$, $df = 1$, $p = .000$, partial $\eta^2 = .777$). Chi2 tests (from 3.50 to 3.96 – values above 3) indicated a high degree of implementation of behavior. A multivariate analysis of variance showed a higher degree of success after training (Wilks-Lambda $F = 32.108$, $df = 1,127$, $p = .000$). Overall

results showed training uniformly improved small business owner's PI and entrepreneurial success. This study reinforces the significance of training as PI antecedent.

Ulacia et al. (2017) designed, implemented, and evaluated a quasi-experimental design with a non-equivalent control group to develop PI in the education field. Spanish vocational training center students ($N = 160$) were divided into an experimental group (119 participants) and a control group (41 participants). Training was incorporated into an academic semester. Training consisted of weekly one-hour classroom sessions and monthly two-hour sessions. Instructors led brainstorming and group discussions focused on self-starting, proactive, and persistent work behavior. Instructors utilized self-reporting scales to measure (pre and post-tests) entrepreneurial attitude (disposition towards excellence, confidence, and resiliency), self-efficacy, emotional intelligence (attention, clarity, and regulation), academic achievement and PI. Results indicated an increase in self-starting (component of PI) and improved student academic achievement and entrepreneurial attitude. Also, researchers identified self-efficacy and two dimensions of emotional intelligence (clarity and regulation) showed small improvements. This research again highlights training as an important PI antecedent. Overall, the study demonstrated an interesting way to incorporate research into a formal education organization. However, the authors' research is of limited value based on research methodology and design.

The most significant investigation of PI training found researchers utilizing a three-year, five-wave longitudinal study of 1,500 Togolese small business firms selected

through national applications funded through the World Bank (Campos et al., 2017). Small firms were randomly assigned to a control group ($N = 500$), a traditional training group ($N = 500$), and PI training group ($N = 500$). A control group of small businesses received no training. Traditional training group businesses received Business Edge training program which concentrated on accounting and financial management, marketing, human resource management, and formalization. PI training groups focused on self-starting behavior, innovation, identifying and exploiting new opportunities, planning, goal setting, and overcoming obstacles. Training consisted of three half-day, weekly lessons over four weeks, followed by three-hour training visits monthly over four months. Researchers used quantile regression of the inverse hyperbolic sine transformation to measure traditional training and PI training. Huber-White Robust Standard Errors approach was used to run multiple regressions to measure business survival, monthly sales, monthly profits, weekly profits, and profits and sales index. Overall results showed traditional business training increased firm profits by 11%. PI training, which focused on psychological mindset, increased firm profits by 30%. This study underscores initiative training as more cost effective than regular training and its importance as a PI antecedent.

Description of Research Variables

For this study, I compared four independent variable and four dependent variables in an ex post facto setting. Officers commissioning source represented the independent variables (categorical). Dependent variables (continuous) were PI scores of field grade

officers, combat arms field grade officers, non-combat arms field grade officers, and civilian small middle managers.

Officers' Commissioning Source

More than 6,000 officers are commissioned into the U.S. Army each year (Headquarters, 2019d). Total number of officers commissioned vary depending on budget, officer retention, and operations. Army officers are commissioned from four sources: USMA, ROTC, OCS, and direct commission.

USMA is a four-year federal service academy which commissions Army officers upon graduation (Headquarters, 2006, 2021a). Approximately, 1,000 cadets graduate from USMA and are commissioned each year. In 2018, USMA graduates were approximately 15% of total officers commissioned (Office of the Assistant Secretary of Defense for Personnel and Readiness, 2018).

ROTC is a college program presented at over 1,100 colleges and universities which, upon degree completion, produces commissioned officers for active and reserve component (Headquarters, 2019f). ROTC commissioned almost 3,500 officers on to active duty in 2018 (about 52% of the annual cohort) (Office of the Assistant Secretary of Defense for Personnel and Readiness, 2018).

OCS is a twelve-week U.S. Army training academy. Entrance eligibility is restricted to active-duty non-commissioned officers and civilians, with four-year degrees. Other entrance prerequisites include citizenship, age, physical, mental, and security requirements. Education focuses on basic leadership skills and intensive tactical leadership training exercises (Headquarters, 2017c). OCS provided 1,144 (about 17% of

the annual cohort) officers for commissioning in 2018 (Office of the Assistant Secretary of Defense for Personnel and Readiness, 2018).

A fourth method of commissioning officers is through direct commission program. Civilians with special professional skills (ordained minister, registered nurse, law school graduate and member of the bar) needed for operations can apply for officer commissions. Four special branches are eligible for direct commission: Medical Department, Chaplain Corps, Judge Advocate General Corps, and as of 2018, Cyber Branch. Applicants attend a direct commission course and subsequent education in their area of expertise. For example, a lawyer would attend a six-week direct commission course and then a 10-week basic officer leadership course (Crane et al., 2019; Headquarters, 2006, 2017a, 2018). Direct commissions made up 14% (926 officers) of officers commissioned in 2018 (Office of the Assistant Secretary of Defense for Personnel and Readiness, 2018).

Understanding commissioning sources was crucial for this study. In Research Question 3, I measured relationships between commissioning source and field grade officers' PI score. Officer commissioning source may be an important antecedent to PI.

Field Grade Officers

Field grade officers are officers holding ranks of Major, Lieutenant Colonel, and Colonel with between 10 to 17 years' service (Headquarters, 2019d). Field grade officers are Army middle managers and supply a structural link between senior leaders and junior leaders. In this study, field grade officers will refer to Majors and Lieutenant Colonels attending CGSOC.

Combat Arms Officers

Combat arms officers are U.S. Army officers required to have a broad understanding of combined arms doctrine, training, and force structure. There are seven Army branches designated as combat arms officers: infantry, armor, field artillery, air defense artillery, aviation, special forces, and engineer corps (Headquarters, 2019g).

Non-Combat Arms Officers

Non-combat arms officers are U.S. Army officers who are not combat arms officers, grouped by technical specialty or skill which entails increased education, training, and experience. Army non-combat arms officers are organized into 18 branches: chemical corps, signal corps, military intelligence corps, military police corps, adjutant general's corps, finance corps, ordnance corps, quartermaster corps, transportation corps, judge advocate general's corps, chaplain corps, medical corps, medical service corps, dental corps, veterinary corps, army medical specialist corps, cyber corps, and army nurse corps (Headquarters, 2019c).

Middle Managers

Middle managers are an organizational group who serve as a conduit between senior management and employees (Abugre & Adebola, 2015; Way et al., 2018).

Effective middle managers are expected to proactively identify variances developing from lower levels and persistently overcome barriers through aligning initiative support from senior managers (Glaser et al., 2016).

Literature Gap

PI research is a relatively new field of study (Frese et al., 1997a; Frese et al., 1996). Over the last quarter-century, less than 100 peer-reviewed research journal articles and book chapters have been published on the subject. Researchers have investigated PI in two general subject areas, antecedents and effects. Current U.S. Army doctrine writers recognize PI's importance and frame modern battlefield leadership requirements by emphasizing initiative's criticality (Headquarters, 2019a). Senior Army leaders are concerned the last two decades of counterinsurgency operations have eroded initiative in the force (Morris, 2018; Rempfer, 2019). While Army senior leaders recognize the importance of initiative in field grade officers, it does not train, educate, or measure PI in this group (Command and General Staff College, 2020a). The literature gap is the Army's general lack of PI research.

Summary and Conclusions

In this chapter, I provided a chapter outline, a description of literature search strategy, theoretical foundations, and literature review. The literature search strategy explained my process in researching relevant information concerning PI theory, field grade officers, and middle managers. Theoretical foundations provided the origin and described major theoretical propositions regarding PI. Additionally, theoretical foundations presented PI theory application from previous research. Literature review was the main portion of Chapter 2. Most PI research falls into two areas of study, antecedents and effects. My literature review focused four areas of PI antecedents: behavioral effects, leadership effects, organizational effects, and training effects.

My present study helps fill a literature gap by measuring Army field grade officer PI. Existing literature in the field measures PI in civilian organizations mainly at individual level and sometimes middle management level. As of this writing, this is the first study which measured PI of Army members, especially field grade officers. My research also compared PI scores between field grade officers and civilian middle managers. Additionally, I examined if there is a difference in PI scores between combat arms and non-combat arms officers. Lastly, I investigated if commissioning source impacts field grade officers' PI score.

In Chapter 3, I explain my research methodology. First, I justify research design and rationale. Next, population and sampling procedures, data collection procedures, data collection instruments, reliability and validity assessment are discussed. Finally, I describe data analysis procedures, internal and external validity, and ethical procedures used throughout this research process.

Chapter 3: Research Method

The purpose for this quantitative, causal-comparative study was to measure PI differences between combat arms and non-combat arms field grade officers. Researchers have demonstrated PI is crucial to organizational change, innovation, and performance initiatives (Baer & Frese, 2003; Hakanen et al., 2008; Hartog & Belschak, 2007; Las-Hayas et al., 2018). Through this study I sought to advance the PI body of knowledge by measuring Army field grade officer PI and examining the PI to officer branch and commissioning source relationship.

In this chapter, I describe research design and rationale including study variables, research design, and research question connections. Additionally, I address research methodology, population under study, sampling procedures, recruitment, participation, primary data collection, and instrumentation. Lastly, in this chapter, I discuss the data analysis plan which will identify software used for analyses, data cleaning and screening procedures, and restated research questions and hypotheses.

Research Design and Rationale

I used a quantitative, causal-comparative research design. Quantitative research is a formal, objective, and systemic process that defines, examines relationships, and scrutinizes associations between variables (Bloomfield & Fisher, 2019). Additionally, quantitative research generates numerical data attempting to identify an objective answer through testing hypotheses using impartial scientific methods.

Researchers using causal-comparative design, or ex post facto research, attempt to determine cause or significance of differences among pre-existing groups after an event.

Causal-comparative research designs are suitable when researchers cannot control research variables (Brewer & Kuhn, 2010). Researchers cannot establish direct cause-and-effect determination using causal-comparative design; however, such research designs can reveal statistical relationships among independent and dependent variables (Kelly & Ilozor, 2019). Causal-comparative research infers cause and effect, which makes it distinct from correlation research design (Çiçekoğlu et al., 2019). A causal-comparative design disadvantage is the measured relationship between independent and dependent variables may not prove causal. In fact, independent and dependent variable relationships may result from unexamined or confounding variables (Brewer & Kuhn, 2010). Thus, it is important for causal-comparative designs to contain categorical variables as independent variables and continuous variables as dependent variables (Schenker & Rumrill, 2004).

A causal-comparative design was appropriate for this study. I compared four independent variables and four dependent variables in an ex post facto setting. Officer commissioning sources served as independent variables (categorical). Field grade officer (combat arms and non-combat arms) and civilian middle managers PI scores served as dependent variables (continuous). In Research Question 1, I compared two dependent variables (PI scores of field grade officers and civilian middle managers). In Research Question 2, I also compared two dependent variables (PI scores of combat arms and non-combat arms field grade officers). I determined, through Research Question 3, whether there was a relationship among commissioning sources and PI of field grade officers. Research Question 3 included four independent variables (the four commissioning

sources); USMA, ROTC, OCS, and direct commission. Research Question 3 also included one dependent variable, PI score.

Experimental or quasi-experimental designs were not appropriate for this study. With quasi-experimental designs, researchers can manipulate independent variables but cannot randomize participant groups (Bloomfield & Fisher, 2019). Researchers employing experimental designs maintain the greatest level of control as compared to other research designs. With experimental designs, researchers are able to manipulate dependent variables (intervention), randomize participants, and establish a control or comparison group. My study did not manipulate either independent or dependent variables, randomize participant groups, or establish a control group.

Methodology

Population

My study population consisted of U.S. Army field grade officers attending the CGSOC resident course. Field grade officers are officers holding the rank of Major, Lieutenant Colonel, and Colonel with 10 to 17 years' service (Headquarters, 2019b). Field grade officers are Army middle managers and supply a crucial link between senior leaders and junior leaders. In this study, field grade officer referred to Majors and Lieutenant Colonels attending CGSOC.

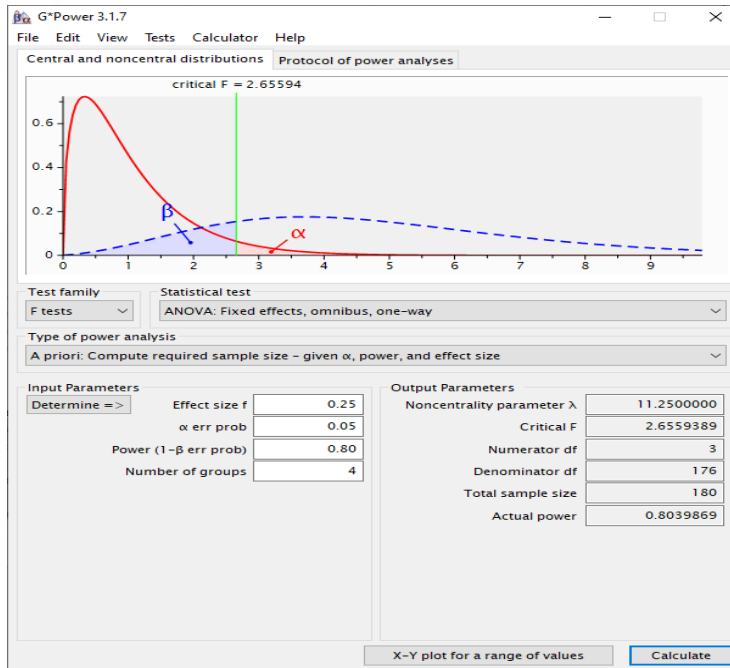
CGSOC is the Army's intermediate level professional military education course which credentials field grade officers. The in-resident course is conducted in three phases over 43 weeks with 899 in-class academic contact hours and a comprehensive oral board. CGSOC's goal is to prepare field grade officers to function successfully as organizational

leaders and staff officers in extremely difficult tactical and operational conditions (Command and General Staff College, 2020a). Resident CGSC student population sizes vary year to year depending on branch cohort size and Army operational requirements. There were 867 field grade officers attending the Command and General Staff Officer Course (CGSOC) in academic year 2021 (Command and General Staff College, 2019).

Sampling and Sampling Procedures

This study's target population included Army officers attending the resident course of CGSOC during academic year 2021. CGSOC planners anticipated attendance of 905 Army field grade officers for academic year 2021 (Command and General Staff College, 2020b). I used random sampling techniques to select participants from a greater field grade officer population. Sample participants were drawn from resident officers/students attending the U.S. Army CGSOC. Frese's et al. (1997b). SRIS served as the study's measurement instrument.

A power analysis was conducted using G* Power 3.1.7 (Faul et al., 2014). Data analysis consisted of independent sample *t* tests and an ANOVA. The ANOVA had the largest sample size requirement and utilized power analysis software. Several parameters were entered into G*Power: effect size (f) = .25, alpha = .05, and power = .80. Four groups were compared corresponding to commission source (USMA, ROTC, OCS, and direct commission). Upon entering parameters into G*Power, a minimum sample size for research was calculated to be 180 participants – with approximately 45 participants in each commission source (see Figure 3).

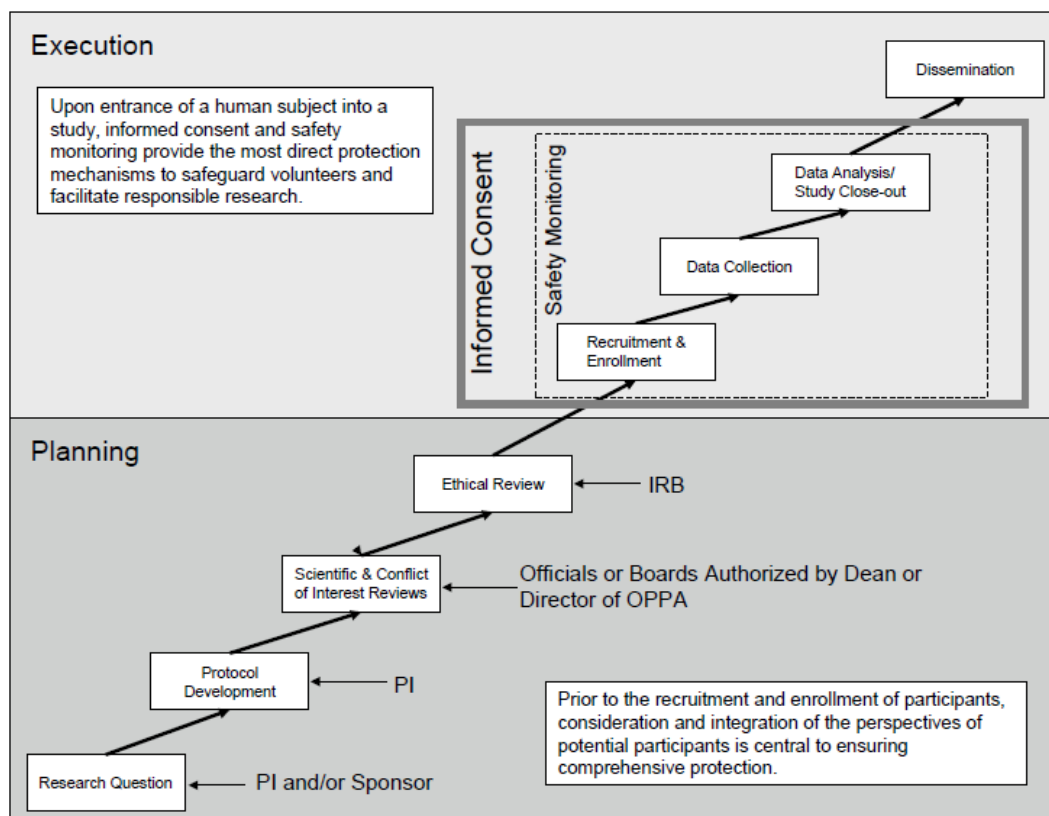
Figure 3*G*Power output for ANOVA*

Frese's et al., (1997b) SRIS served as the study's measurement instrument. My research used results from five separate studies to obtain a mean PI score for middle managers. Each study used SRIS with a 5-point Likert scale to measure PI. The mean PI score for the five studies was 3.96. De Dreu and Nauta (2009) examined Dutch manager's self-interest and organizational behavior, $n = 273$. Glaser et al. (2016) investigated how middle managers of one global transport and logistics company balance risk and proactivity, $n = 383$. Hong et al. (2016) considered proactivity in managers in 22 establishments of an international hotel chain, $n = 328$. Horstman (2018) explored how German middle manager's PI act as a moderator for health specific leadership, $n = 525$.

Lastly, Nsereko et al. (2018) researched how manager's PI influenced social entrepreneurial venture creation in a developing country, $n = 243$.

Procedures for Recruitment, Participation, and Data Collection (Primary Data)

Study recruitment, participation, and data collection was executed in accordance with Walden University, CGSC, and Department of Defense policies (Command and General Staff College, 2020d; Department of Defense, 2020). CGSC human research is designed to ensure fundamental protects of participants and is organized into two stages containing eight phases (see Figure 3). Human research at CGSC starts in a planning stage as Phase 1 has an investigator, and or a sponsor, refining research questions. Second, a written, detailed research protocol is developed for review and approval by the human protections director. Third, research protocol is examined for scientific validity and significant conflicts of interest in a scientific and conflict of interest review. Fourth, the CGSC Institutional Review Board (IRB) performs an ethical review of the research protocol.

Figure 4*Phases of Non-Exempt Human Research at Command and General Staff College*

Note. This model shows the chronological two stages and eight phases of human research at CGSC. From *U.S. Army Command and General Staff College Human Research Protection Program*, by CGSC, 2020. In the public domain.

Phase 5 (recruitment and enrollment) initiates the execution stage. In this phase the CGSC survey manager administered approved surveys via Blackboard. My survey was sent to an approved sample randomly selected from the population. To avoid perception of coercion, CGSC did not recruit participants but did advertise the survey that

was administered through Blackboard to support an external research project and that the survey was approved by CGSC. Officer participation is completely voluntary.

Phase 6 is data collection. Demographic information collected relating directly to approved research questions included rank, branch, and commissioning source. Each survey will started with an implied consent page, which included contact information for myself, the human protections director, and an approved IRB. Additionally, this implied consent page included a statement that by continuing onward, students gave consent to be part of this research effort. The survey ended with a page thanking individuals for participating and again providing contact information for questions or concerns.

Phase 7 is data analysis/study close-out. During this phase, the CGSC survey manager provided me de-identified data to preserve population anonymity. At study termination, I will submit a final report to the human protections director. The eighth, and final phase is dissemination. For this phase, I will describe to the IRB how I intend to disseminate study results for scientific advancement.

Instrumentation and Operationalization of Constructs

My survey instrument consisted of two sections: SRIS to assess participant career-based initiative and demographic questions (see Appendix A). SRIS was developed in 1997 by Dr. Michael Frese to assess employee self-perceptions of possessing a complete set of personal goals in addition to what is formally mandated by the job. Measured employee goals consist of pro-active thinking about long-range problems, forming long-term goals, and effecting one's ideas (Frese et al., 1997b). SRIS is a self-reported rating scale comprising seven positively worded items answered using a

5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. SRIS reliability is assessed as high given Cronbach's alpha for this scale is .87. SRIS was based on Bateman and Crant's (1993) Proactive Personality Scale.

Since its development, Frese's SRIS is the most often used instrument in PI research. Investigators have used SRIS to measure PI on multiple continents in several cultures. Warner et al., (2017) helped establish construct validity by using a two-wave, 24-month longitudinal study to develop PI predictors of German adolescent performance ($n = 1,593$). Researchers tested hypotheses using structural equation modeling. Findings showed comparative fit index of .967 and Tucker-Lewis index of .964 (with a value of .95 or more indicative of acceptable model fit). Results also indicated root-mean-square-error of approximation of .045 (with a value of .06 or less indicative of acceptable model fit). Researchers found a standardized root-mean-square residual of .038 (with a value of .05 or less indicative of acceptable model fit). Cronbach's alpha was .88 for the first test and .90 for the second test.

Zacher et al., (2018) examined how PI impacted Australian worker ($n = 297$) occupational well-being. Investigators used SRIS in a six month, three-phased longitudinal study. Using confirmatory factor analysis, researchers found root-mean-square-error of approximation between .024 and .028. Authors also found a standardized root-square-mean-error approximation between .053 and .064. Both these findings support construct validity of SRIS.

Similarly, Hu et al., (2019) used SRIS to measure PI and its relationship to entrepreneurial intention by surveying Chinese workers ($n = 210$). Researchers

determined convergent validity using average variance extracted with a range of .52 and .73 (all greater than recommended benchmark of .05). Researchers also established discriminant validity by comparing correlations between variables average variance extracted square roots. Cronbach's alpha ranged from .88 to .91. Results indicate good discriminant validity since all variable correlations were lower than the square roots of these average variances.

Nsereko et al. (2018) investigated PI's role in social entrepreneurial venture creation in community-based organizations in a developing economy. Authors used SRIS to survey Ugandan community-based organization entrepreneurs ($n = 243$). Researchers used confirmatory factor analysis to assess data. Results showed comparative fit index ranged between .963 to .985, Tucker-Lewis index ranged between .959 to .986, and root-mean-square-error of approximation ranged between .032 to .075. Cronbach's alpha was .832. All these findings support construct validity and reliability.

Over the last quarter century SRIS has been used in numerous studies, on six different continents, in various cultures. There is a logical link between measuring the differences in initiative between two different groups of German workers (the original PI research) and two groups of U.S. Army officers; therefore, the SRIS appears construct valid (Cook & Campbell, 1979). Frese's SRIS instrument was most appropriate for my study since I measured and compared PI scores in all three research questions. I obtained permission from Dr. Frese to use his instrument (see Appendix B).

Data Analysis Plan

I uploaded research data into SPSS version 26.0 for Windows. Participants who did not respond to a majority of survey questionnaire were removed from further analysis. Frequencies and percentages were examined for nominal-level variables, such as rank, branch, and commissioning source. PI scores were computed through an average of the seven Likert-scale statements, with possible scores ranging from 1.00 to 7.00. Univariate outliers on PI scores were identified through use of standardized scores, or z -scores. Z -scores exceeding + 3.29 standard deviations from the mean were removed from further inferential analysis (Tabachnick et al., 2018). Descriptive statistics, such as mean and standard deviation were examined for PI score on the collective sample.

Cronbach's alpha test of reliability and internal consistency was performed on SRIS. Cronbach's alpha represents a mean association between each pair of survey items and number of items comprising a scale (Brace et al., 2016). The alpha values were evaluated and interpreted using guidelines prescribed by (George & Mallery, 2020) where $a > .9$ Excellent, $a > .8$ Good, $a > .7$ Acceptable, $a > .6$ Questionable, $a > .5$ Poor, $a < .5$ Unacceptable.

RQ 1: What are the differences in the overall PI score between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers?

H_01 : No significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers.

H_{a1} : Significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers.

To address Research Question 1, I conducted a one-sample t test to analyze for differences in PI between field grade officers and non-military, middle managers. A one-sample t test is appropriate when assessing for differences in a continuous-level variable and a hypothesized value (Pallant, 2020). An independent grouping variable corresponded to group – field grade officers and non-military, mid-level managers. A dependent variable corresponded to PI scores as measured by SRIS.

RQ 2: What differences exist, if any, in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School?

H_{02} : No significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School.

H_{a2} : Significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School.

To address Research Question 2, I conducted an independent sample t test to analyze for differences in PI between combat and non-combat arms officers. Independent grouping variable corresponded to group – combat arms and non-combat arms. Dependent variable corresponded to PI scores as measured by SRIS.

Prior to analysis, assumption of normality and homogeneity of variance was tested. Normality was verified in Research Question 2 using a Kolmogorov-Smirnov test. Homogeneity of variance was tested to determine whether the variance of PI scores is

significantly different between combat and non-combat arms officers. A Levene's test was utilized to test homogeneity of variance assumption (Howell, 2016). Levene's test significance ($p < .05$) indicated assumption for homogeneity of variance was not met. If normality assumption was not met, a non-parametric Mann-Whitney U was used as an alternative test. If homogeneity of variance was not met, the "equal variances not assumed" test statistic for the t test will be interpreted. If both assumptions were met, an independent sample t test was conducted in conventional format.

RQ 3: What differences exist, if any, in PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School?

H_03 : No significant differences exist among PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School.

H_a3 : Significant differences exist among PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School.

To address Research Question 3, I conducted an ANOVA to analyze the relationship between PI and field grade officer commissioning source. An ANOVA is appropriate when assessing differences in a continuous-level variable among three or more groups (Tabachnick et al., 2018). The independent grouping variable corresponded to commissioning source: USMA, ROTC, OCS, and direct commission. The dependent variable corresponded to PI scores as measured by SRIS.

Prior to analysis, normality assumptions and variance homogeneity were tested. Normality was verified in Research Question 3 using a Kolmogorov-Smirnov test. A Levene's test was utilized to test homogeneity of variance assumption for commissioning

source variable (USMA, ROTC, OCS, and direct commission). If either normality or homogeneity of variance assumptions were not met, an alternative non-parametric Kruskal-Wallis test will be used. If both assumptions were met, a conventional ANOVA was conducted. Post-hoc analyses were conducted using Tukey comparisons. Tukey comparisons identified which commissioning source groups are significantly different in regard to PI scores. Statistical significance for all inferential analyses was interpreted at the generally accepted level, $\alpha = .05$.

Threats to Validity

External Validity

External validity, or generalizability, is the extent which study results are applicable to other people, times, or settings (Leedy & Ormrod, 2019). Generalizing across groups of people demands representative samples from a research population. Generalizing across times and settings usually requires methodical experimental practices at various times and settings. Parker (1993) explains five basic threats to external validity; interaction of treatments with treatments, interacting of testing with treatments, interaction of selection with treatment, interaction of setting with treatment, and interaction of history with treatment.

One external validity study threat present was interaction of selection with treatment. This threat happens when participants are volunteers and may be disposed to seek out research participation. My research mitigated this threat using statistical control (ANOVA) to account for differences in individual measurable attributes.

A second external validity study threat was interaction of setting with treatment. This threat describes treatments exhibited in one environment may not apply in another setting. My research mitigated this threat by using the SRIS to measure PI. The SRIS has been the PI measurement instrument standard for the last quarter century. SRIS external validity was exhibited by the variety of settings in which it was used to measure PI including: disabled African college students, Cronbach's alpha .93 (Johnmark et al., 2016); to German automotive repair shop employees, Cronbach's alpha .91 (Starzyk & Sonnentag, 2019); to African micro-entrepreneurs, Cronbach's alpha .84 (Mensmann & Frese, 2019); to German elementary school children, Cronbach's alpha α .95 (Warner et al., 2017); to communist Chinese manufacturing employees, Cronbach's alpha .70 (Lingyu et al., 2019).

Internal Validity

Internal validity is a study's credibility or trustworthiness (Leedy & Ormrod, 2019). Parker (1993) explains there are nine threats to internal validity: history, maturation, testing, instrumentation, statistical regression, selection, mortality, interactions with selection, and ambiguity about the direction of causal influence. Selection was the most significant threat to my study's internal validity. Selection internal validity threat occurs when participants self-select or are assigned to groups based on preference, thus introducing bias into the study (Flannelly et al., 2018). I alleviated internal validity threats by randomly recruiting participants, employing statistical control (ANOVA), and restricting variable range.

Construct Validity

Construct validity is the degree an assessment plan produces trustworthy results concerning a quality which cannot be directly witnessed (Leedy & Ormrod, 2019). My study measured the abstract behavioral concept of PI. Previous studies showed construct validity of a questionnaire to measure PI. Frese et al. (1997a) used different methods to determine initiative in the framework of multiplism (Cook & Campbell, 1979), but not to a full multitrait-multimethod matrix. Fay and Frese (2001) used results from 11 studies to demonstrate PI was related to network of variables such as knowledge, skills, cognitive abilities, personality, behavior, and performance.

Parker (1993) defines various threats to construct validity. The most applicable threat to my study was evaluation apprehension. Evaluation apprehension is when study participants attempt to portray themselves in a flattering light due to anxiety. My study mitigated this threat through using a randomized, voluntary, online survey posted by a third-party following IRB approval. Additionally, construct validity threat of evaluation apprehension was mitigated by making the survey voluntary and anonymous for participants. In my case, the CGSC survey manager acted as a third party. CGSC survey manager notified an approved, randomly selected sample from the population, about an authorized survey on Blackboard. The survey manager then posted the survey on Blackboard for a set period. Information collected by the survey manager was stripped of personal identifying information and then sent to me.

Ethical Procedures

This study aligned with Walden University and Army University IRB ethical research requirements. Both Walden and Army University refer to the *Belmont Report* as a principal reference for ethical research. The *Belmont Report* also framed the development and conduct of my study. The *Belmont Report* determined three fundamental ethical research principles; respect for persons, beneficence, and justice (Bracken-Roche et al., 2017). Respect for persons signifies protecting study subject autonomy by means of voluntary informed consent. Research participation in my study was completely voluntary with an informed consent protocol as part of the survey.

Beneficence compels researchers to have participant welfare as a goal in any investigation. For my research, participant protection meant adhering to CGSC Human Research Protection Program. When the coordinated survey period ends, CGSC survey manager de-identified results before passing them to me. This de-identification process protects study subjects and aligns with ethical research principles recognized in the *Belmont Report*.

As an ethical research principle, justice calls on researchers to weigh potential study burdens and benefits. Using randomly selected, de-identified volunteers should have eliminated potential research participant burdens. A general benefit from this study could be improved understanding of field grade officers PI and improved individual and organizational performance.

Confidential data protection is an important ethical consideration. Data received from CGSC survey manager was anonymous and de-identified of personal information. I

plan to retain research data for five years after my PhD dissertation publication. I will secure collected research data in a locked file cabinet at 2406 South 24th Street, Leavenworth, Kansas for five years. Five years after approval of my dissertation, I will destroy all data collected during my research.

Summary

In this chapter, I included details of quantitative methodology and causal-comparative design as the rationale for use in my research. I reviewed three research questions and dependent and independent variables to help frame research goals. Given this research study's intent, resident CGSC students are the most appropriate target population. CGSC's eight phases of human research provided an outline for my explanation of recruitment, participation, and data collection. In Chapter 3, I also provided a detailed description of SRIS which illuminated instrumentation and operationalization of constructs. I used G*Power and SPSS software to describe statistical *t* tests and ANOVA in my data analysis plan. Additionally, I explained mitigations to threats of validity. Finally, I reviewed how procedures in my study will align with principles of ethical research.

In Chapter 4, I will offer detailed research question results in two related sections. First, in the data collection section, I will address study timeframe, response rates, sample demographics, and how representative the sample is of the larger population. Second, in the study results section, I will report descriptive statistics, evaluate statistical assumptions, and research questions statistical analysis.

Chapter 4: Results

I sought to measure PI differences between combat arms and non-combat arms field grade officers as well as differences between Army field grade officers and civilian mid-level managers. I developed research questions to address the differences in overall PI score between combat and non-combat arms officers, the differences in PI between Army field grade officers and mid-level managers, and differences in PI among commissioning source of field grade officers. In this chapter, I provide important information concerning data collection and analysis process. Data analysis and interpretation serves as this chapter's most significant section. Frequencies and percentages are used to examine trends of nominal-level variables. Means and standard deviations are used to explore for trends in continuous-level data. To address research questions, I utilized a one-sample t test, an independent sample t test, and an ANOVA. Statistical significance was evaluated at the conventional alpha level, $\alpha = .05$. Chapter 4 is organized into four different sections, which include this an introduction, data collection and analysis, results, and summary.

Data Collection

Study participants consisted of U.S. Army field grade officers attending the resident CGSOC course. The CGSC survey manager electronically transmitted survey invitations/consent forms to the total student population ($N = 1,089$) attending the resident course of CGSOC. All potential participants were advised their study involvement was completely voluntary, confidential, and anonymous. Data collection began on February 22, 2021 and concluded March 5, 2021.

Because of technical limitations, the survey manager sent invitations/consent forms to the entire CGSOC population, which included non-Army students who did not meet study inclusion criteria. A total of 215 participants responded to the survey instrument, of which 16 participants were removed for not meeting inclusion criteria of being a U.S. Army officer. Potential outliers were also examined through use of standardized values, or *z*-scores. Two outliers were identified for PI scores and these participants were subsequently removed from further analysis. The final sample size consisted of 197 participants out of total eligible population of 830, which represents a 23.7% response rate.

The sample consisted of 47 promotable captains (23.85%) and 150 majors (76.14%). A total of 85 participants were from combat arms branches (43.15%), and 112 participants were from non-combat arms branches (56.85%). Commissioning source consisted mostly of ROTC officers (98, 49.75%). This study's commissioning source percentage generally reflects the Army wide commission source percentage with ROTC officers at 52% (Office of the Assistant Secretary of Defense for Personnel and Readiness, 2018). Frequencies and percentages of nominal-level variables are presented in Table 1.

Table 1*Frequency Table for Nominal Variables*

Variable	<i>n</i>	%
Rank		
Captain (promotable)	47	23.86
Major	150	76.14
Branch		
Combat arms	85	43.15
Non-combat arms	112	56.85
Commissioning source		
ROTC	98	49.75
USMA	30	15.23
OCS	57	28.93
Direct Commission	12	6.09

Note. ROTC = Reserve Officer Training Corps, USMA = U.S. Military Academy, OCS = Officer Candidate School. Due to rounding errors, percentages may not equal 100%.

To measure PI score, I administered the SRIS. An average was computed from the seven survey items of the SRIS. Cronbach's alpha was evaluated using guidelines suggested by George and Mallery (2020), where $a > .9$ Excellent, $a > .8$ Good, $a > .7$ Acceptable, $a > .6$ Questionable, $a > .5$ Poor, $a < .5$ Unacceptable. PI scores met acceptable threshold for internal consistency ($a = .84$). PI scores ranged from 3.00 to 5.00, with $M = 4.37$ and $SD = .48$. Means and standard deviations of continuous variables are presented in Table 2.

The Kolmogorov-Smirnov test was used to test assumption of normality. Kolmogorov-Smirnov compares test data to a theoretical bell-shaped distribution. The Kolmogorov-Smirnov test findings were significant, $p < .001$, indicating assumption of normality was not supported for PI scores. Therefore, for Research Questions 2 and 3,

non-parametric analyses (Mann-Whitney U test and Kruskal-Wallis) were used as alternative analyses to an independent sample t test and an ANOVA, respectively.

Study Results

In this section I review study results organized by research questions. For each research question I report; exact statistics and associated probability values, confidence interval around statistics, and effects size.

Research Question 1

RQ 1: What are the differences in the overall PI score between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers?

H_01 : No significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers.

H_{a1} : Significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School and non-military, mid-level managers.

I performed a one sample t test to examine for significant differences in PI scores by non-military, mid-level managers of 3.96. A one sample t test is appropriate when testing for differences in a mean of a sample to a hypothesized mean (Pallant, 2020). Results of the one sample t test were significant, $t(196) = 12.03$, $P < .001$, which indicated there were significant differences between mean PI scores for U.S. Army field grade officers attending CGSS and non-military, mid-level managers' means PI score of

3.96. The Research Question 1 null hypothesis (H_{01}) was rejected. The results of the one sample t test are presented in Table 2.

Table 2

One Sample t Test for Personal Initiative Scores by Field Grade Officers at U.S. Army CGSS and Non-Military, Mid-Level Managers

Variable	Field Grade Officers at U.S. Army CGSS		Non-military, mid-level managers	$t(196)$	p
	M	SD	M		
Personal initiative scores	4.37	0.48	3.96	12.03	< .001

Research Question 2

RQ 2: What differences exist, if any, in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School?

H_{02} : No significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School.

H_{a2} : Significant differences exist in PI between combat arms and non-combat arms field grade officers at the U. S. Army Command and General Staff School.

An independent sample t test was proposed to assess for differences in PI scores between combat arms and non-combat arms field grade officers. Due to normality not being supported on PI scores, I conducted a Mann-Whitney U test as an alternative analysis. The independent variable corresponded to branch - combat arms and non-combat arms field grade officers. The dependent variable corresponded to PI scores.

The result of the Mann-Whitney U test was not significant, $z = -1.37$, $p = .171$, indicating no significant differences in PI scores between combat arms and non-combat

arms branches. As a result, the null hypothesis for Research Question 2 (H_02) was not rejected. The Research Question 2 response results are presented in Table 3.

Table 3

Mann-Whitney U test for Personal Initiative Scores by Combat Arms and Non-Combat Arms Branches

Variable	Combat arms		Non-combat arms		z	p
	n	Mean Rank	n	Mean Rank		
Personal initiative scores	85	105.36	112	94.17	-1.37	.171

Research Question 3

RQ 3: What differences exist, if any, in PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School?

H_03 : No significant differences exist among PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School.

H_a3 : Significant differences exist among PI and commissioning source of field grade officers at the U. S. Army Command and General Staff School.

I conducted an ANOVA to determine whether there were significant differences in PI scores by commissioning source. Due to normality not being supported on PI scores, I performed a Kruskal-Wallis as an alternative analysis. The independent variable corresponded to commissioning source: ROTC, USMA, OCS, and direct commission. The continuous dependent variable corresponded to PI scores.

Kruskal-Wallis test results were significant, $H(3) = 9.52$, $p = .023$, indicating significant differences in PI scores exist by commissioning source. Due to Kruskal-Wallis test significance, post-hoc analyses with pairwise comparisons were used to identify

which commissioning source had different PI scores. Table 4 presents the findings of the Kruskal-Wallis test.

Table 4

Kruskal-Wallis Test for Personal Initiative Scores by Commissioning Source

Variable	ROTC		USMA		OCS		Direct Commission		$H(3)$	p
	n	Mean Rank	n	Mean Rank	n	Mean Rank	n	Mean Rank		
Personal initiative scores	98	110.94	30	88.03	57	89.72	12	72.96	9.52	.023

Note. PI = Personal Initiative, ROTC = Reserve Officer Training Corps, USMA = U.S. Military Academy, OCS = Officer Candidate School

Post-hoc pairwise analyses indicated officers commissioned through ROTC had significantly higher scores in comparison to direct commission and OCS commissioned officers. While there were no significant differences between USMA and the other three commissioning sources, USMA and ROTC approaches significance ($p = .053$ which is very close to the .05 threshold; see Table 5). Due to significance of the Kruskal-Wallis test, the null hypothesis for Research Question 3 (H_{03}) was rejected which indicates significant relationships exist between PI scores and commissioning source of field grade officers at the U. S. Army Command and General Staff School. Table 5 presents the findings of the pairwise differences.

Table 5*Pairwise Differences for Personal Initiative Scores by Commissioning Source*

Sample 1	Sample 2	Test statistic	<i>p</i>
Direct commission	USMA	0.78	.437
Direct commission	OCS	0.93	.352
Direct commission	ROTC	2.19	.029*
USMA	OCS	-0.13	.895
USMA	ROTC	1.94	.053
OCS	ROTC	2.25	.025*

Note. ROTC = Reserve Officer Training Corps, USMA = U.S. Military Academy, OCS = Officer Candidate School. *Signifies that difference was statistically significant.

Summary

The researcher's purpose for this quantitative, causal-comparative study was to measure PI differences between combat arms and non-combat arms field grade officers. In this chapter, data collection and analyses findings were presented. Frequencies and percentages were used to examine trends of the nominal-level variables. Means and standard deviations were used to explore for trends in the continuous-level data. To address the research questions, a one-sample *t* test, an independent sample *t* test, and an ANOVA were used. However, due to the normality assumption not being supported – non-parametric analyses were conducted for Research Question 2 and Research Question 3.

The finding of one sample *t* test for Research Question 1 was significant, indicating there were significant differences in mean PI scores for U. S. Army Command

and General Staff School ($M = 4.37$) to non-military, mid-level managers mean score of 3.96. The null hypothesis for Research Question 1 (H_01) was rejected. Results of the Mann-Whitney U test was not significant, indicating there were not significant differences in PI scores between combat arms and non-combat arms branches. The null hypothesis for Research Question 2 (H_02) was not rejected. Results of the Kruskal-Wallis test were significant, indicating there were not significant differences in PI scores by commissioning source. My findings also indicated ROTC had significantly higher scores in comparison to direct commission and OCS. The null hypothesis for Research Question 3 (H_03) was rejected.

In the next chapter, I examine findings of the data analysis. Connections between results and literature are provided. Limitations and recommendations for future research are discussed. Finally, potential of PI supporting social change are considered.

Chapter 5: Discussion, Conclusions, and Recommendations

My goal for this quantitative, causal-comparative study was to measure PI differences between combat arms and non-combat arms U.S. Army field grade officers at CGSS. Current Army doctrine writers frame modern battlefield leadership requirements by emphasizing the criticality of initiative (Headquarters, 2019a, 2019b). But senior Army leaders are concerned that the last two decades of counterinsurgency operations have eroded initiative in the force (Morris, 2018; Rempfer, 2019). Field grade officers are an indispensable cohort of Army middle managers and leaders. Middle managers connect senior leader guidance to lower level organizational action, and in the process, overcome internal and external obstacles (Glaser et al., 2016).

Based on senior Army leader anecdotal observations, I expected higher PI scores for combat arms officers over non-combat arms officers. My findings indicated no significant differences in PI scores between combat arms and non-combat arms U.S. Army field grade officers. However, my findings showed the PI scores of field grade officers at the U.S. Army Command and General Staff School were significantly higher than PI scores of non-military, mid-level managers. Lastly, in this study I demonstrated significant differences in PI scores for some field grade officer commission sources. Specifically, PI scores of officers commissioned through ROTC were significantly higher than officers commissioned through OCS ($p = .025$) or direct commission ($p = .029$) and USMA and ROTC differences approached significance ($p = .053$), which is very close to the .05 threshold). The findings of my study will contribute to overall knowledge of and research on PI and workplace behavior.

In this final chapter, I will interpret study findings as they relate to previous research and provide recommendations for further PI research. Additionally, I will discuss implications for organizational practice and positive social change.

Interpretation of Findings

PI theory is relatively new and helps researchers explain individual work behavior. Since Frese et al.'s (1996) first investigation, there have been less than 100 peer reviewed articles and book chapters documenting PI research. PI research efforts fall into two main categories: PI antecedents and PI effects. My research questions focused on PI antecedents. There are numerous antecedents, or precursors, to PI behavior, and most of the research on PI over the last quarter century has focused on PI antecedents. PI antecedent research is grouped generally into four areas: behavioral effects on PI, leadership effects on PI, organizational effects on PI, and training/educational effects on PI. Better understanding PI antecedents was an important focus of this study.

Findings from my research were mixed. Results showed that field grade officers attending CGSS had a significant higher PI score than non-military, mid-level managers. My results also indicated no significant difference in PI scores between combat arms and non-combat arms field grade officers. Lastly, my findings showed ROTC commissioned field grade officers had significantly higher PI score than OCS and direct commission, approaching significantly higher PI score over USMA commission officers.

Research Question 1

For the first research question, I used a one sample *t* test, which indicated a statistical significant difference in PI score between U.S. Army field grade officers

attending CGSS and non-military, mid-level managers. As shown in Chapter 2, training and education are important PI antecedents (Frese et al., 2016). Training and education are new approaches to improving entrepreneurial activity and proactive behavior (Jacob et al., 2019; Weigt-Rohrbeck & Linneberg, 2019). Although no previous research has compared PI scores between military and non-military mid-level managers, in studies on civilian populations, investigators found that PI education and training improves PI and entrepreneurial outcomes (Gorostiaga et al., 2019). My results from this study demonstrate a major implication in understanding the impact of training and education as antecedents on PI score. U.S. Army professional military education, a combination of training experience, formal education, and self-study, may act as better PI antecedent than civilian education and training.

Research Question 2

I used an independent sample *t* test in the second research question to assess differences in PI scores between combat arms and non-combat arms field grade officers. Since normality was not supported on PI scores, a Mann-Whitney U test was performed as an alternative analysis. My findings showed no significant differences in PI scores between combat arms and non-combat arms branch officers. Though no current research exists on Army officer PI, a similar civilian study showed psychology-based PI training was more successful than general entrepreneur training (Campos et al., 2017). The results from my study may indicate that the Army's professional military education is successful in producing an officer with relatively high PI regardless of branch.

Research Question 3

For the third research question, I used an ANOVA to determine whether there were significant differences in PI scores among commission sources. Due to normality not being supported, a Kruskal-Wallis test was conducted as an alternative analysis. No previous research has measured PI score differences among Army officer commissioning source. But researchers have shown positive correlation between high PI and student achievements (Liando & Lumettu, 2017). Results from my study indicated significant higher PI scores for ROTC commission officers over direct commission and OCS officers. Additionally, ROTC officers had higher PI scores over USMA officers which approached significance ($p = .053$ which is very close to the .05 threshold). My findings indicate officer commission source acts as a more powerful antecedent than the Army professional military education.

Limitations of the Study

This section includes discussion of study limitations and what was done to mitigate them. Limitations were related to areas of validity, reliability, generalizability, study timing, the self-reporting survey instrument, and the cross-sectional approach. Internal validity is a study's credibility or trustworthiness (Leedy & Ormrod, 2019). Parker (1993) explained there are nine threats to internal validity: history, maturation, testing, instrumentation, statistical regression, selection, mortality, interactions with selection, and ambiguity about the direction of causal influence. Selection was the most significant threat to my study's internal validity. Selection internal validity threat occurs when participants self-select or are assigned to groups based on preference, thus introducing bias into the study (Flannelly et al., 2018). I alleviated internal validity

threats by randomly recruiting participants, employing statistical control (ANOVA), and restricting variable range.

In the context of my study, reliability referred to the consistency of PI measurements. I used SRIS to measure participant goals of pro-active thinking about long-range problems, forming long-term goals, and effecting one's ideas to determine a PI score. SRIS is a self-reported rating scale comprising seven positively worded items answered using a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. SRIS reliability is assessed as high given Cronbach's alpha for this scale is .87. Therefore, reliability of this study was high.

Generalizability, or external validity, is the extent which study results are applicable to other people, times, or settings (Leedy & Ormrod, 2019). Generalizing across groups of people demands representative samples from a research population. This study's samples consisted of 23.7% of Army attendees of resident CGSOC. All officer branches and all four different officer commissioning sources were represented in this study. Commissioning source consisted of 98 ROTC (49.75%), 30 USMA (15.23%), 57 OCS (28.93%) and 12 direct commission (6.09%). This study's commissioning source percentage generally reflects the Army wide commission source percentage with ROTC (52%), USMA (15%), OCS (17%), and direct commission (14%) (Office of the Assistant Secretary of Defense for Personnel and Readiness, 2018). The officer commission source representative sample percentage of this study and total Army percentage are comparable and generally represented reality. Generalizing across times and settings usually requires methodical experimental practices at various times and settings. My

study was limited to a single, two-week survey window in one setting. My research mitigated this threat to generalizability by using the SRIS to measure PI. The SRIS has been the PI measurement instrument standard for the last quarter century. Overall, generalizability limitations of this study were negligible. This study's findings should generalize to the larger target population.

Data collection timing was another limitation in the study. Officers attending resident CGSS are prime candidates for surveys for researchers from across the Department of Defense. For 10 months each year, CGSS is the single largest concentration of field grade officers in the Army. CGSS attendees are invited to participate in numerous surveys throughout the academic year. According to the CGSC Survey Manager, student "survey fatigue" can be noticed by month five of the course. My research commenced in February, which is the seventh month of the ten-month CGSOC. While "survey fatigue" was a concern, total participants ($n = 197$) exceeded my target sample size ($n = 180$) with a participation rate of 23.7%.

For this study, I used the SRIS to measure PI scores. The SRIS is a self-report survey. A self-report survey can lead to common method bias (Brenner & DeLamater, 2016). The SRIS has been used in numerous studies over the last three decades. Tornau and Frese (2013) performed a meta-analytic review on often researched proactivity concepts, including PI, and demonstrated SRIS holds construct validity.

A final limitation is the cross-sectional nature of my study. Since members of the armed services are considered a vulnerable population, I was only granted access to CGSS students after a rigorous approval process. Access to students was allowed with

certain restrictions including limited time in which to conduct the survey. This time constraint necessitated a one-time, cross-sectional approach.

Recommendations

Recommendations for future research include examining PI using longitudinal and multi-level procedures and designs. Most research into PI over the last quarter century has focused on PI antecedents which fall into roughly four areas: behavioral effects on PI, leadership effects on PI, organizational effects on PI, and training/educational effects on PI. Based on the literature review, researchers have not examined the combination of training and education as important PI antecedents. Findings of the present study added to the scholarly information on PI antecedents, specifically education. While researchers have examined short-term training programs to improve PI (Zappala et al., 2021), researchers have not investigated general education combined with training. Future studies should focus on longitudinal and multi-level aspects of training, education, and PI.

The present study included a cross-sectional approach to collect data from several sub-groups in one time. Other researchers (Warner, Fay, Schiefele, et al., 2017) have employed a longitudinal approach to investigate PI, yet no researchers have used longitudinal design to examine civilian mid-level managers or Army officers. Future research into how education and training act as antecedents for Army officer's PI should include multiple waves of data collection. One option would be to measure PI before each educational milestone in an officer's career progression. This four-wave study would measure officer PI before the beginning of their: commission source program,

Basic Officer Leader Course, Captain Career Course, and CGSS. Such a study would require significant effort and stretch over 15 years but would contribute to better understanding the relationship between training and education as important antecedents of PI.

Another important recommendation for future research is employing multi-level and multi-perspectival study designs. Researchers have previously used multi-level design in studying PI (Sok et al., 2020), but no researchers have used multi-level design to investigate civilian mid-level managers or Army officers. When researching PI, multi-level designs usually rely on employee-supervisor dyads. The employee is given the SRIS as a self-report instrument to measure PI, while the supervisor is provided a different instrument to assess the employee PI. Employing this technique on Army officers could add precision to self-reported PI scores and help mitigate common method bias.

For U.S. Army professional military education, a combination of training experience, formal education, and self-study may serve as a better PI antecedent than civilian education and training. To advance knowledge in educational and training approaches, further research is recommended on combinations of training approaches for PI antecedent in PME. More research is also recommended on further examining connections between officer branch, professional military education, and officer PI. My results also indicated officer commission source was a more powerful antecedent than Army professional military education; additional research is therefore recommended on officer commission source and PI to confirm the connection. Finally, to address potential

survey fatigue and possible self-report bias, further research is recommended on professional military education using objective means or archival data.

Implications

Social Change

While my research addressed a general and specific management problem, it also addressed a gap in literature concerning PI in Army officers. Furthermore, the findings include beneficial practical information for stakeholders and implications for positive social change. This section includes discussion of the implications for practical and positive social change. My study findings indicate potential affirmative multi-echeloned social change opportunities.

A general spread of knowledge could improve PI in individual U.S. Army officers, which may in turn improve organizational effectiveness. Frese et al. (1997) explained PI as a critical organizational effectiveness factor and a developable attribute. U.S. Army organizational effectiveness is measured by mission accomplishment and casualties (Lopez, 2017). Improved organizational effectiveness, aided by improved PI, could better support the Army in increased mission accomplishment and decreased casualties.

Another implication for positive social change from this study is increased diversity in the Army. Recently, researchers from USMA showed objective performance criteria, such as PI, supports increased diversity and improved functioning (Hosie & Griswold, 2017). Evaluating and promoting officers based on objective measurements, such as PI score, may improve workforce diversity and organizational functioning. Right

now, the Army lacks a validated instrument to measure PI; however, if there is an increased desire to assess officers at junior levels, prior to promotion to higher rank, then measuring PI scores could provide a solution. Developing, validating, employing, and assessing a PI data capturing instrument may yield insights into future officer performance, if PI is indeed a valuable attribute.

A final positive social change implication is cost. PI training is more cost effective than traditional training (Campos et al., 2017). Army leadership planned to spend \$196 million dollars on professional military education in 2020 (Congressional Budget Office, 2019). Improved field grade officer PI offers potential savings better used for other government programs. Increased PI rates could improve U.S. Army operational effectiveness resulting in saved lives and money.

Conclusions

In this study, I identified a lack of knowledge concerning PI and U.S. Army field grade officers. Senior U.S. Army leader's anecdotal observations suggested combat arms officers display more initiative than non-combat arms officers (Lopez, 2017). Differences in initiative between sub-groups, like combat and non-combat arms officers, affect overall performance resulting in diminished organizational effectiveness and perceived differences in individual capabilities (Frese et al., 1996).

My study contained the overarching question – what are the differences in the overall PI score between combat arms and non-combat arms field grade officers at the U.S. Army Command and General Staff School. I had three major findings to contribute to the body of PI knowledge. First, there were no significant differences in PI scores

between combat arms and non-combat arms U.S. Army field grade officers. Second, PI scores of field grade officers at the U.S. Army Command and General Staff School were significantly higher than PI scores of non-military, mid-level managers. Finally, there were significant differences in PI scores for some, but not all field grade officer commission sources. Specifically, PI scores of officers commissioned through ROTC were significantly higher than officers commissioned through OCS or direct commission. Additionally, PI scores for ROTC commissioned officers were higher than USMA commissioned officers, but while approaching significance, were not statically significant. Limitations of my study were typical and mitigable, and so acceptable.

I intend to disseminate this new PI knowledge through several avenues. First, I will publish my results on the CGSC website to add to the general body of knowledge inside the college. Second, I will present my findings in an open lecture to the CGSC students and faculty to spread new knowledge and provide curriculum developers information to incorporate into the college's program of study. Lastly, I intend to publish my findings in peer reviewed periodical, which may result in positive social change by Army wide incorporation of objective performance criteria, such as PI, that in turn supports increased diversity and improved organizational functioning.

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Appendix A: Demographic and SRIS Questions

Demographic Questions

1. What is your rank?

Captain (Promotable)	Major
Major (Promotable)	Lieutenant Colonel

2. What is your branch?

Adjutant General's Corps	Air Defense Artillery
Armor	Army Medical Specialist Corps
Army Nurse Corps	Aviation
Chaplain Corps	Chemical Corps
Cyber Corps	Dental Corps
Engineer Corps	Field Artillery
Finance	Infantry
Judge Advocate General's Corps	Medical Corps
Medical Service Corps	Military Intelligence Corps
Military Police Corps	Ordnance Corps
Quartermaster Corps	Signal Corps
Special Forces	Transportation Corps
Veterinary Corps	

3. What is your commissioning source?
 - Reserve Officer Training Corps (ROTC)
 - United States Military Academy (USMA)
 - Officer Candidate School (OCS)
 - Direct Commission

Self-Report Initiative Scale

(answered using a 5-point Likert scale)

4. I actively attack problems.
5. Whenever something goes wrong, I search for a solution immediately.
6. Whenever there is a chance to get actively involved, I take it.
7. I take initiative immediately even when others don't.
8. I use opportunities quickly in order to obtain my goals.
9. Usually, I do more than I'm asked to do.
10. I am particularly good at realizing ideas.

Appendix B: Email to Professor Frese

From: Michael Frese
Sent: Thu 5/21/2020 11:13 PM
To: Gregory Thomas

Sure, please use it, but cite it correctly. It is open source, you can gladly use it; good luck with your research.

Michael Frese

I can be reached at ASB (below) or at Leuphana
Prof. Dr. Michael Frese
Asia School of Business (in collaboration with MIT Sloan Management) (ASB)
Sasan Kijang, 2 Jalan Dato Onn
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Researchgate: <https://www.researchgate.net/profile/MichaelFrese3?ev=prf>

On Wed, May 6, 2020 at 12:22 AM Gregory Thomas wrote:

Professor Frese,

Sir, my name is Greg Thomas. Currently, I am a doctoral student at Walden University writing my dissertation. The topic is Personal Initiative Differences between Combat Arms and Non-Combat Arms Field Grade Officers. I am writing to gain your approval to use your Self-Reported Initiative Scale to measure Personal Initiative in my study.

Additionally, I would like to thank you for your ground-breaking work in the field of Personal Initiative which frame all subsequent research and researchers like me.

Respectfully,

Gregory Thomas