THE COMPARATIVE STUDY OF COGNITIVE HARDINESS IN BABY-BOOMER, GENERATION "X" AND MILLENNIAL GENERATION POLICE OFFICERS

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by

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Comparative Study of Cognitive Hardiness in Three Generations of Police Officers

Abstract

The Comparative Study of Cognitive Hardiness in Baby-boomer, Generation X and Millennial Generation Police Officers

by

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This study examined generational differences between Millennial police officers and those of a combined Baby Boomer and Generation X cohort with the hypothesized expectation of higher rates of cognitive hardiness, resilience, improved coping skills, and more effective performance under a range of stressful work-related conditions among the combined Baby Boomer and Generation X cohort. Specifically, this study focused on generational cohorts (i.e., Millennial, Generation X, and Baby Boomer) of police officers from the San Francisco Bay Area in California. The study sample consisted of 146 police officers employed by the San Francisco Police Department. The measures used to operationalize this study examined total cognitive hardiness, dysphoria or job dissatisfaction, as well as the emotional and avoidance effects of coping. This study hypothesized a set of relatively complex relationships between the variables of cognitive hardiness, dysphoria, and effects of coping in relation to generational cohorts. None of these hypothesized relationships were upheld. In the category is the relationship between the two coping variables and the dependent variable. Emotional Effects of Coping was significantly related to Dysphoria or job dissatisfaction, Avoidance Effects of Coping was also significantly related to Dysphoria or job dissatisfaction (though inversely). Additionally, Cognitive Hardiness was significantly related to Emotional Effects of
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Coping. The findings from this study demonstrate that specific stressors inherent in the occupation of law enforcement are important to understand regardless of generational cohort. The outcome of this study suggests that future research in the area of dysphoria/job dissatisfaction and other coping factors might be beneficial to the law enforcement profession, especially when discussing the issues of job burn-out and retention.

Keywords: police officers, generational differences, cognitive hardiness, job dissatisfaction (dysphoria)
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CHAPTER ONE: INTRODUCTION

Over the past two decades there has been much attention given to the issue of stress among police officers (Burke, 1993; Collins & Gibbs, 2003). The law enforcement profession and the role of a police officer is said to be a stressful occupation and law enforcement agencies recognize that stress is part of the profession and working conditions (Burke, 1994). Chronic exposure to environmental risks (e.g., assaults on police officers) often creates a lasting impact on police officers. The lasting impact may manifest in increased cynicism, hypervigilance, substance abuse, loss of friends outside of the law enforcement community and an overidentification with the role of being a police officer (Burke, 1994). In today’s police culture, officers face new external sources of stress such as increased media attention and the frustrations with other components of the criminal justice system (Gaub, Choate, Todak, Katz, & White, 2016). Millennial police officers will experience even more scrutiny than those experienced by Baby Boomer and Generation X police officers, especially when required to wear a body camera (Gaub et al., 2016).

According to the 2014 United States National Criminal Justice Bureau statistics, 95 law enforcement officers were killed in the line of duty. Of the officers who died, 51 were shot, which is an increase of almost 89% compared to the 27 officers killed in 2013 (National Criminal Justice Bureau, 2014). From 1980 through 2014, an average of 64 law enforcement officers have been murdered per year. Of the remainder of the officers killed in the line of duty, 44 officers were accidently killed, and of those deaths 28
officers died as a result of motor vehicle accidents (National Criminal Justice Bureau, 2014).

According to statistics reported to the FBI in 2018, 106 law enforcement officers were killed in line-of-duty incidents in 2018. Of these, 55 officers died as a result of felonious acts, and 51 officers died in accidents (National Criminal Justice Bureau, 2018). An additional statistic that is not mentioned in the National Criminal Justice Bureau figures includes the high number of law enforcement officers who commit suicide each year as compared to the general population in the United States. The best estimate of suicide in the law enforcement profession is 18.1 per 100,000 (Aamodt & Stalnaker, 2001). This figure is 52% greater than that of the general non-law enforcement population (Aamodt & Stalnaker, 2001).

Although job-related stress is certainly not unique to police officers, the intensity and variety of stressors that police officers encounter are markedly different from other professions (Roberts & Levenson, 2001). Police officers may exhibit hypervigilance, being on constant alert to danger and other risks; this is likely to play a significant role in the officer’s behavior and relationship with others, both at home and work (Abdollahi, 2002). Although most police officers appear to be resilient to the daily occupational and organization stressors associated with the law enforcement profession, this research study is focused on the cognitive hardiness, work-related stress, job dissatisfaction, and coping mechanisms of Millennial generation police officers as compared to the generations of Generation X and Baby Boomers. This is of particular importance, especially since many of the Baby Boomers and Generation X officers are close to retirement age, therefore
many agencies will lose experienced officers to retirement. Secondly, Millennial law enforcement officers are facing new and stressful demands that previous generations never had to experience.

CHAPTER TWO: REVIEW OF THE LITERATURE

The following is a review of the literature that is relevant to the focus of this study. A brief overview of selection and evaluation of police officers is presented. A review and explanation of generational differences among police officers as it applies to this study, is followed by a description of potential maladaptive reactions to stress and stressful experiences that police officers may have while on duty. This study presents empirical findings related to cognitive hardiness, coping responses, and discusses dysphoria or job dissatisfaction as it relates to differences among police officers of various generations. This work can inform policymaking to identify specific improvements in training and support systems within the particular law enforcement agency.

Police Stress: Organizational and Occupational Stressors

The concept of stress is better explained as a complex relationship between multiple factors and is manifested in both environmental circumstances (i.e., occupational stressors) and intrapsychic processes (e.g., negative cognitive schemata or irrational thinking). This could manifest itself in a confrontational interaction between a police officer and a citizen. Lazarus and Folkman’s (1984) model of stress posits dependence on the transaction between the circumstance (i.e., event) and the person, but requires that the person-environment transaction be appraised on the basis of the individual’s goals (Lazarus, 1999, pp. 57-61). For instance, when a police officer has received an unwanted
transfer to a new assignment (i.e., transaction) that requires long working hours (i.e., stressor), the officer could very well be exceeding his or her capabilities (i.e., organizational stressors). A person’s ability to handle stress has largely been viewed as an important determining factor in physical health, emotional wellness, and performance (Bartone, 1999; Helmers, Danorf, Steinert, Leyton, & Young, 1997; Lazarus & Folkman, 1984). Stress has been shown to have an impact on such things as heart disease and the ability to communicate (i.e., negative interactions with citizens), whether in a relationship or during the course of one’s daily activities (Roberts & Levenson, 2001).

Police officer stress can be divided into two categories: (a) occupational stress, which is defined as the stress experienced due to the nature of police work (e.g., violent crimes and risk of death on a regular basis); (b) organizational stress, which is defined as the stress experienced by the officer as a result of the administrative infrastructure of the police agency (e.g., hierarchy, perceived lack of support); (Abdollahi, 2002; Webster, 2014). Recently, officers have also been reporting higher levels of stress associated with racial/ethnic tensions within the community (occupational stress) and how these tensions impact day-to-day operations within the police department (Clark-Miller & Brady, 2013). These occupational stressors, combined with personal stressors such as marital/family issues, shift work, and lack of sleep can impact an officer’s ability to function effectively regardless of generational cohort (Clark-Miller & Brady, 2013; Hart & Wearing, 1995; Tang & Hammontree, 1992; Webster, 2014).

Regarding organizational stress, considering the ongoing departmental manpower issues caused by the current economic times, police officers often are mandated to work double shifts and special patrol details beyond their regular shift assignments (Clark-
Miller & Brady, 2013). This prolonged exposure to the daily stressful demands faced by law enforcement officers can have a negative impact on their ability to perform their job duties (e.g., impaired judgement); (Clark-Miller & Brady, 2013).

Despite the known long shifts and stressors associated with the profession, many officers agree to overtime work, which may be due to their loyalty or desire for the additional salary. When stress and fatigue are left unmanaged, police officers may find themselves at high risk for physical and psychological ailments such as heart disease, alcohol and controlled substance abuse (e.g., pain medication), anxiety, depression, domestic violence, increased aggression, divorce, and premature death (Abdollahi, 2002).

Even more tragic and often overlooked when discussing police stress and coping strategies, is the topic concerning the frequency of police officer suicides. Heyman, Dill, and Douglas (2018) state that the estimated number of law enforcement suicides is 18.1 per 1,000,000, which is 52% greater than that of the general population. Nationwide, a new study by the Ruderman Family Foundation, a philanthropic organization, stated that 140 police suicides occurred in the United States in 2018 alone (Heyman, et al., 2018). The group found that while suicide has been an ingrained issue for years, very little has been done to address it even though first responders have post-traumatic stress disorder (PTSD) and depression at a level five times that of civilians. (Heyman, et al., 2018).

The long-term effects of prolonged exposure to traumatic stressors associated with law enforcement duties place police officers at risk of developing posttraumatic stress injury, which has been one of the leading causes of suicide in law enforcement (Abdollahi, 2002). When left untreated, officers experiencing traumatic stress exhibited difficulty in expressing feelings, emotional exhaustion, isolation, and dissatisfaction with
the organization when not being allowed sufficient time for treatment with the traumatic incident (Abdollahi, 2002). The cumulative effect of stress exposure and unhealthy coping, such as alcohol use, when left untreated can create a cognitive shift, which may result in increased cynicism among police officers (Abdollahi, 2002).

Psychological Burnout

Psychological burnout, the exhaustion of workers in service jobs, has been studied frequently over the past 45 years. Over 3,800 publications on psychological burnout, most of which pertain to human services, have been published (Kop, Euwema & Schaufeli, 1999). Occupational groups that are most often studied are those of teachers, nurses, physicians and social workers (Kop et al., 1999). However, psychological burnout is also associated with police officers' work-related stress (Maslach, 2015).

For the purpose of this study, Maslach's theory of burnout can be defined as an extreme state of emotional exhaustion due to chronic exposure to occupational stress, and embodies a unique response to interactions between the provider of a service (i.e., police officer) and the recipient (e.g., civilian); (Maslach, 2015; Russell, 2014; Marinussen, Richardson, & Burke, 2007). Brown, Fielding, and Grover's (1999) study also included three additional categories dealing with traumatic stressors such as exposure to death and disaster, and a second factor was related to routine work such as dealing with victims and the possibility of being exposed to violence and injury. The third category was vicarious stressors (e.g., dealing with victims of sexual crimes), which had intermediate frequency and moderate impact. All types of stress were related to various outcomes including suffering from psychological distress.
Symptoms associated with burnout include the service provider’s frustration, depression, anger, and a numbing of emotions (Kroes, 1976). Furthermore, it has been demonstrated that officers reporting higher levels of burnout tend to display fatigue, uneasiness, poor interpersonal, and increased anger (Burke, 1993). Since law enforcement is among the most stressful high-risk occupations, officers suffer higher rates of illness, burnout, cynicism, absenteeism, job dissatisfaction, and premature retirement (Hart & Wearing, 1995, Kop et al., 1999). Organizationally, dangerous and risky environments, such as that of the police officer’s occupation, also bear the burden of higher organizational costs, such as employee training and retention, health care, and worker’s compensation insurance (Russell, 2014). Other older studies conducted on psychological burnout have produced some interesting links to police behavior. Burnout and stress have also been found to interfere with the officer’s ability to put together pieces of information and form logical conclusions, make decisions quickly and accurately, and retain detailed information (McCready, 1974).

Burke’s (1993) study on psychological burnout examined a research model developed to understand work satisfactions and emotional and physical well-being among police officers. Data were collected from 828 men and women in police work. Considerable diversity was present in the sample; a majority were male law enforcement officers in their early careers. Work stressors and psychological burnout were fairly consistently and significantly related to levels of self-reported work attitudes and emotional and physical well-being. Participants in his study reported the stress related to police work left them feeling tired, disillusioned, and emotionally exhausted. These officers also frequently reported increased social isolation, and the lack of job
gratification was significantly related to low job satisfaction and greater intention to quit. Somewhat surprisingly, work-family conflict and individual coping responses were generally unrelated to measures of work attitudes and self-reported emotional and physical well-being. Burke’s (1993) study had some limitations including the lack of a prior employment history for the participants, since many of the participants had little life experience. That factor can influence cognitive hardiness and resiliency as it relates to law enforcement careers. Cognitive hardiness can best be defined as a personality construct comprising three related general dispositions of commitment, control, and challenge (Maddi, 1999). Hardiness was conceptualized as something that develops, rather than is inborn (Maddi & Kobasa, 2000). The frequency of sick leave use can be instrumental in assessing whether officers have the cognitive hardiness and resiliency and adequate coping skills for the highly stressful job.

Kroes’ (1976) study noted that for some officers an abundance of absences was a result of trying to avoid a particularly upsetting situation. Furthermore, it has been speculated that there may be the effect of trauma by association (Kroes, 1976). Specifically, one officer’s traumatic experience, such as being involved in a shooting, may result in symptoms of distress in another officer. A police officer may become conflicted by the demands of the job, which may lead to a host of psychological consequences, especially increased levels of burnout (Schaible & Six, 2015). The Schaible and Six (2015) study emphasizes that in addition to stressors of policing, officers have the unique responsibility of exercising the coercive authority of the local, state, and federal jurisdictions. There is an expectation that given that level of authority, police conduct will be tempered by a high level of professionalism. Due to the
consequences and the complexities of these roles, the assertion is police officers are subject to inconsistent demands and requirements during the course of their duties (Schaible & Six, 2015).

There is a wide spectrum of professional conduct for police officers. Circumstances may vary where the officers are expected to be "nicer than nice" and in other situations "tougher than tough" (Schaible & Six, 201, p.4) in their role as law enforcement officers. An accumulation of adverse consequences may contribute to counterproductive interactions between police and citizens, in which weary or exhausted officers, wittingly or unwittingly, take out their frustrations through their official authority (Schaible & Six, 2015). An example of this stereotypical behavior could include a police officer who may be having a bad day, an argument with his spouse, or a negative interaction with a supervisor and begins to issue traffic citations with an attitude. As a result, a citizen's complaint may occur as a result of the negative interaction.

Theory and empirical research have identified a number of dimensions of emotion work that are likely to have a range of benefits and disadvantages in the workplace (Schaible & Six, 2015). According to Schaible and Six (2015), researchers have a better understanding of police burnout, and the impact key dimensions: emotional exhaustion (EE), depersonalization (DP), and one's sense of personal accomplishment (PA).

EE exists when one's circumstances demand a high degree of inauthentic or powerful emotions (Maslach, 2015). Emotional exhaustion results in a metaphorical draining of one's emotional resources to an unsustainable level (i.e., chronic fatigue). Similarly, out of repeatedly unpleasant social interactions (i.e., DP), a sense of distance or
depersonalization from others may emerge. This becomes counterproductive to one's functioning in his or her role or personal affairs (Schaible & Six, 2015). For example, a police officer who consistently has unpleasant interactions with the public due to ongoing exposure to social media, television news, or low socio-economic policing districts may eventually distance himself entirely and have little connection to the citizens. Lastly, personal accomplishment (PA) an example being a police officer may develop a diminished sense of efficacy or personal accomplishment as a product of routine encounters with others who are dissatisfied with his or her actions (Schaible & Six, 2015).

All of the above-mentioned studies have provided some valuable and useful information about what some officers experience as a result of the psychological burnout that is encountered on the job. While the elements of the aforementioned studies appear to have face validity for the experience of police officers, it is unclear whether these items fully capture demands for emotional expression encountered by officers. Specifically, it is unclear how the inclusion of additional items might have changed the dimensionality of required emotions.

However, the literature reviewed thus far has failed to evaluate (a) a broader range of emotional demands likely to be encountered by officers through their duties; (b) the protective factors related to an officer who appears to be functioning effectively despite ongoing exposure to trauma. These seem to be very important factors in understanding behavior and coping responses in officers. Questions related to why individuals react to stressful events in such different ways can be addressed by examining
stress theories and research on occupational burnout.

**Police Officer Selection**

When applying to the police department, police recruits must pass a written examination, participate in physical agility testing, pass a rigorous background investigation, and participate in a series of psychological assessments, all of which play an important role in the selection of police officers (Benner, 1986). Prior to standardized testing, most law enforcement agencies used arbitrary and exclusionary standards in the selection of police officers. For example, height and weight requirements, education, credit history, and a previous criminal record constituted common-sense judgment in the selection of police officers. Since the 1980s law enforcement agencies nationwide responded by not only discounting such arbitrary selection criteria, they have also implemented psychological screening and assessments (Benner, 1986).

In order to assess a police candidate’s ability and competency, psychological testing is conducted for the purpose of screening applicants (Abdollahi, 2002). One of the goals of candidate assessments is to identify and select individuals with the capacity to tolerate the particular stressors related to police work (IACP, 1998). The majority of modern law enforcement agencies throughout the nation use some sort of psychological screening in the selection of their officers (Benner, 1986).

Most law enforcement agencies still rely on the Minnesota Multiphasic Personality Inventory-2- Restructured Form (MMP1-2-RF), which can provide some useful information pertaining to the police applicants’ personality structure, and has also been used to evaluate defense styles related to the development of cynical attitudes in police officers (Benner, 1986). Later studies (and later in this research study) discuss the
importance of identifying employees in high-stress occupations, who experienced burnout and emotional exhaustion, which reflected higher rates of cynicism (Leiter, Price, & Laschinger, 2010, p. 972). Currently, many law enforcement agencies now use the Personality Assessment Inventory (PAI) in determining an individual’s capacity for stress tolerance (Weiss, Rostow, Davis, & Decoster-Martin, 2004).

The current applicant pool for police officers is largely from the Generation X cohort, born between the years 1961 and 1981, and the Millennial generation, born after 1981 (Langham, 2017). Although police officer applicants endure a series of written and physical agility examinations, a thorough background investigation, and a battery of psychological evaluations prior to being hired, many applicants seldom have a clear picture of what the job actually entails. An applicant’s unrealistic perception of the job may result in the police officer’s inability to tolerate the stress associated with the profession which may show up days, months, or years after being on the job (Ellison, Sobers, & Harman, 1986).

Occupational stressors in law enforcement may also be influenced by generational differences, which can have an effect on collegial relationships, organizational commitment, job burnout and decreased longevity (Leiter, et al., 2010).

**Recruitment and Retention**

Diminishing sources for recruitment, increasing causes for attrition, and broadening police responsibilities increase challenges of workforce supply and demand in law enforcement. In 2006, it was estimated that more than 80% of U.S. law enforcement agencies had sworn positions they were unable to fill (Woska, 2006). In 2007, vacancies
were still high for many departments with the average large department (at least 300 sworn officers) having 73 vacant openings (Langham, 2017).

The current demand for police officers exceeds the ability to meet it due to limitations such as a high workload, customer service orientation, and available resources (hiring budgets, background investigators, academy class openings); (Wilson, Dalton, Scheer, & Grammich, 2010). The current problems with recruitment of qualified police applicants has been exacerbated due to the number of applicants who do not meet the minimum requirements for becoming a sworn officer. Wilson et al. (2010) contend that it is becoming more difficult for the general population to meet minimum qualifications, such as having a clean criminal record, no history of drug use, good physical health, and financial stability.

Should there also be a prerequisite for a higher level of education remains a much-debated topic (Morison, 2017). The United States Department of Justice’s (U.S. DOJ) Community Oriented Policing Services (COPS) Forum generally agrees there is value in police officers having attained some level of higher education (Morison, 2017). According to the Bureau of Justice Statistics, just 15 % of local law enforcement agencies in the United States required their officers to have some level of college in 2013, and only 1 % required a 4-year degree. The large majority of agencies do not require more than a high school diploma. However, departments serving a population of at least 1 million are more likely to require some college education; 29 % of those big-city departments required at least a 2-year college degree, and another 7 percent required some college education (Morison, 2017). Higher education can be especially valuable for
those officers who work in diverse, multi-cultural communities. Morison (2017) believes that the educational value of college comes not only from classroom instruction but also from exposure to new people and diverse ideas and opinions. Those applicants who attend college tend to get exposed to other students and professors who come from various backgrounds that they weren’t exposed to in the town they grew up (Morison, 2017).

The influence of police management styles, whereby police officers are required to adhere to strict organizational rules, could very well produce frustrations that increases turnover, especially among younger officers (Orrick, 2008, Wilson et al., 2010). Wilson et al. (2010) suggest that younger generations lack the ability to succeed in the “silo” management culture, the paramilitary organizational environment prevalent in many of today’s police agencies, thereby preventing police agencies from fulfilling career interests of younger generations. Loss of trust and confidence in leadership can also adversely impact retention, especially when leaders embrace traditional management models and fail to communicate their vision to employees. Policies and procedures can also affect a police officer’s attitudes, behaviors, and feelings toward the organization (Lambert & Hogan, 2009) Given the importance of organizational fairness to job satisfaction, organizational commitment, or organizational betrayal, law enforcement agencies can create a satisfied and committed workforce with minimal cost through the use of procedurally nondiscriminatory policies. This is especially true for younger recruits, who value organizational fairness and distributive justice (Lambert & Hogan, 2009). Finally, changing generational values suggests that younger police applicants will be more likely to change careers earlier or they may not even pursue a career in law
enforcement (Woska, 2006; Wilson et al., 2010).

**The Ferguson Effect**

Since the officer-involved shooting of Michael Brown, an African American man in Ferguson, Missouri in August 2014, law enforcement has become adversely impacted by the negative publicity regarding highly publicized police-involved deaths. The social media attention to his shooting, and the phrase *Ferguson Effect* have now become part of law enforcement lexicon (Pyrooz, Decker, Wolfe, & Shjarback, 2016). Specifically, the Ferguson effect is the idea that increased scrutiny of police followed the shooting of Michael Brown. The phrase *Ferguson Effect* can also be linked to *de-policing* a mechanism that usually suggests that police are less vigorous in their law enforcement duties that might lead to backlash. This increased scrutiny of police officers has also contributed to low morale, recruiting shortages, and job dissatisfaction (Gorner, 2016; DeMarche, 2015).

Pyrooz et al. (2016) theorized that the negative publicity and public protest regarding police behavior leads officers to withdraw from enforcing the law (de-policing) for fear of criticism and lawsuits. As a direct effect of social media, police officers throughout the United States may have become more hesitant to be proactive in the performance of their duties out of concerns for being subjected to negative media scrutiny (Pyrooz et al., 2016).

November 2, 1999, following the discovery and disclosure of a corruption incident by the Los Angeles Police Department (LAPD), the United States Department of Justice (DOJ) notified the city of Los Angeles that it intended to file a civil suit alleging
that the department was engaging in a pattern or practice of excessive force, false arrests, and unreasonable searches and seizures. This type of civil suit is also known as a Consent Decree which is intended to promote police integrity within a law enforcement agency to prevent the conduct that deprives individuals of their rights, privileges, or immunities protected by the Constitution of the United States (Stone, Foglesong, & Cole, 2009). Stone et al. (2009) research revealed that while the consent decree was in place, Los Angeles police officers said they engaged in de-policing activities to avoid receiving citizen complaints and reprisal for making “honest mistakes” resulting in any form of de-policing. It must be noted, however, that de-policing is difficult to measure since it requires measurements of police activity, which is generally not publicly available (Stone et al., 2009).

When comparing the study of de-policing in Los Angeles and other major metropolitan cities (e.g., Pittsburgh Police Department), it is important to note that the shooting in Ferguson occurred in the era of social media (Pyrooz et al., 2016). The massive social media response following the events in Ferguson may have precipitated de-policing through the viral spread of information across social media (Pyrooz et al., 2016). Public criticism of the police on social media has spread throughout the United States, often in response to officer-involved shootings (Miller, 2016). Social media also played an important role in drawing attention to Ferguson and related events (Pyrooz et al., 2016), making it possible for events to be observed in one city and the impact to reach across to other areas of the United States. Since information can be posted on social media sites (e.g., Facebook, Twitter) as well as news services, often much of the information has yet to have been vetted by creditable sources. The effects of social media
not only may lead to de-policing or diminish the legitimacy of law enforcement across the United States, but at the very least may increase overall job dissatisfaction (Gorner, 2016; Pyrooz et al., 2016). The growing anti-police mood as a result as convinced many prospective candidates to abandon a career in law enforcement (DeMarche, 2015). Several other law enforcement agencies are also reporting applicant withdrawals amid current negative attitudes towards law enforcement, and the indiscriminate killing of police officers (e.g., Dallas, Texas); (DeMarche, 2015). The Pyrooz et al. (2016) study has not addressed the extent of de-policing post-Ferguson, and the impact on morale. Wolfe and Nix (2016) found in their study that officers who felt less motivated as a result of negative publicity surrounding law enforcement indicated less willingness to engage in community partnerships, which is an important factor when discussing law enforcement relationship and community problem-solving.

The importance of the Nix and Wolfe study (2016) is the reality that there may be many Ferguson effects, some of which may impact crime rates confined to select cities in the United States, while others may be experienced by officers resulting from negative publicity. In this way, empirical evidence confirms much of the conjecture and anecdotes that some police officers are less motivated and confident, view the job as more dangerous, are arresting fewer people for minor offenses, and are more hesitant to engage with community members in the post-Ferguson era (Wolfe & Nix, 2016). Research has revealed that there are important Ferguson-related effects on officers’ orientations toward their jobs’ de-policing practices, and overall job dissatisfaction.
Generational Differences

The following selection of literature briefly reviews unique differences among generational cohorts (Baby Boomer, Generation X, and Millennial). Social scientists generally define generations or birth cohorts by the impact of cultural events or changes that serve as bookends of an era, which lead to widely accepted traits attributed to each generation (Drew, 2015). A closer look at the psychological make-up of each generation will be helpful in this study when examining the Millennial generation and their ability to manage occupational and organizational stress, levels of cognitive hardiness, and coping mechanisms.

Baby Boomer Generation

The Baby Boomer generation (born between 1946 and 1964) is viewed in relation to the postwar climate of prosperity, although their parents’ generation grew up during the “Great Depression Era” and World War II (Twenge & Campbell, 2008). Family life could be described as quiet, reserved, steadfast, and emotionally steady. Baby Boomers grew up in families in which the norms of self-reliance and emotional self-awareness were present. When interviewed, most Baby Boomers recalled it was difficult for them when attempting to socialize with their parents (Jung, 2011; Twenge & Campbell, 2008).

As Baby Boomers came of age, they experienced many social, political, and cultural changes including the war in Vietnam and the signing of the Civil Rights Act of 1964 (Jung, 2011). The Baby Boomer generation places a strong value on in-person relationships; in part since they did not grow up with Internet technology as a means of communication. The Baby Boomer generation grew up making phone calls and writing letters, thereby solidifying strong interpersonal skills (Jung, 2011).
Baby Boomers generally were strongly socialized towards emotional control and self-reliance during childhood, believing that they were able to navigate through difficult transitions (Jung, 2011). Baby Boomers were taught that hard work, not feelings, mattered in becoming successful (Glass, 2007). According to Jung (2011), emotional displays were not allowed because they were regarded as signs of weakness and emotional dependence. To exhibit emotion was to show one’s vulnerability, this included anger and sadness, and Baby Boomers would suppress or control their feelings, as it was imperative to “get the job done” (Glass, 2007).

While some Baby Boomers pursued a college degree, others chose careers including law enforcement. Whereas other Baby Boomers decided to begin their law enforcement careers as a second profession later on in life. Although law enforcement is a hazardous and physically demanding work environment, it provided generous salaries, and pension plans after 20 or 30 years of service (Henchey, 2005) which made it an attractive job at the time.

As they got older, Baby Boomers actually became fluent in technology and adapted to using cellular phones, computers, and tablets (Ryback, 2016). The difference between Baby Boomers and the other generational cohorts (Generation X and Millennials) is that they use technology mostly as productivity tools as opposed to for connectivity (i.e., social media). Baby Boomers were taught to put their work lives first, play by the rules, and aspire to live the “American Dream,” which meant raising a family, owning a house, and traditional employment (Ryback, 2016). Given our understanding of Baby Boomers take on responsibility, people, and employment, one could expect that this generation would withstand job-related stressors, including burnout, to a high degree.
Generation X

When examining the literature, “Rocking the Ages: The Yankelovich Report on Generational Marketing”, researchers compiled 30 years of comprehensive information regarding habits and lifestyles of Generation X (Smith & Clurman, 1997). Generation Xers (i.e., born between 1965 and 1980) are slated between the two larger and well-known generations, the Baby Boomers and the Millennials. Generation Xers were also dubbed “latch-key kids,” since they were home without adult supervision for some part of the day, especially after school until a parent returns from work (Smith & Clurman, 1997). Generation X was born during the single most anti-child phase in American history (O’Bannon, 2001). In the early 1960s, the birth control pill became widely available, and in 1973, abortion was legalized. These two factors are said to have contributed to the generation’s low population numbers (Ryback, 2016). Generation X was considered the first “day care” generation, because many were raised by two parents who worked or by a single divorced parent (Ryback, 2016). They were often described as being adrift as there were minimal after school resources when they were growing up. Single-parent homes became the norm, and many families were disrupted by divorce. According to O’Bannon (2001), approximately 40% of today’s Generation X spent time in a single-parent home by age 16. He suggests when Generation X children were alone and unsupervised during a portion of their day, they often displayed emotional instability and a lack of maturity (O’Bannon, 2001).

Conversely, Generation X became self-reliant, distrusting authority and large institutions including corporations, religious institutions, and the government (O’Bannon, 2001). The Generation X worldview is based on change, on the need to combat
corruption, different types of abuse, and the acquired immunodeficiency syndrome (AIDS). Generation X was also in search of human dignity and individual freedom, with a need for stability and tolerance (Ryback, 2016; Smith & Clurman, 1997).

In adulthood, the Generation X cohort has focused more on work-life balance rather than following the orderly guidelines of corporate America (Leiter et al., 2010). They delayed marriage and childbearing to focus on developing themselves (Ryback, 2016). They are the first generation to value work-life balance, largely in response to experiencing the consequences of their parents' workaholism and divorce (Ryback, 2016). For many of those of Generation X, the American Dream is having a stable family and the belief that anyone can attain their own version of success. These individuals are motivated by their quality of life as opposed to accumulating possessions. Perhaps due to their own family experiences, they have become a generation of "helicopter parents," which refers to the highly involved and intrusive parenting style of the Generation X cohort (O'Bannon, 2001).

Compared to the Baby Boomers, Generation X is a highly educated generation of Americans. More than 60% of Generation X have attended college at one time or another (Leiter et al., 2010; Ryback, 2016). Generation X has often been criticized for a cynical and casual disdain for authority. In the workplace, they want freedom coupled with responsibility, and they dislike being micromanaged (O'Bannon, 2001). Presently the largest generation currently in law enforcement is Generation X. Depending on their age upon being hired, many of them may have accumulated up to 33 years in law enforcement.
Millennial Generation

The Millennial generation (1981-1997) has been described as the next largest generation since the Baby-Boomer generation and Millennials have frequently been characterized as entitled, self-absorbed, and overconfident (Alsop, 2008). They were raised in families in which children were the priority, being raised by helicopter parents who stayed close, always helping with homework, and setting high expectations (Ryback, 2016). The parenting style for Millennials has focused on frequent affirmations and positive reinforcement, giving significant attention to personal accomplishments, thus the reference to this generation as the “trophy kids” (Mercer-Dalton, 2012). Millennials have expectations of ever evolving demands, interests, and preferences. Millennials have an aptitude for technology because it is a natural language for them; they grew up with technology such as laptops, cell phones, iPads, and video games (Mercer-Dalton, 2012).

Millennials are different from other generations: They are more affluent, highly educated, and oriented towards achievement. Despite these positive characteristics, the expectations to excel could negatively impact their coping skills, (e.g., negative self-talk, increased caffeine use, increased alcohol use, avoidant, increased symptoms of anxiety) which are not only ineffective for alleviating stress, but also putting them at risk for low stress tolerance (Oliver, Reed, & Smith, 1998; Pritchard, Wilson, & Yamnitz, 2007; Economos, Hildebrandt, & Hyatt, 2008; Bland, Melton, Weile, & Bigham, 2012). Millennials may be known as successful and driven, but their dependence on technology has shaped and influenced their interpersonal skills and, as a result, higher rates of depression have flourished in their generation as compared to Baby Boomers and Generation X (Twenge, Gentile, Dewall, Ma, Lacefield, & Schurtz, 2010). Twenge et al.
(2010) assert that depression, loneliness, and panic attacks are significantly more characteristic of Millennials than of preceding generations, including Generations X and Baby Boomers. This could be due to the extreme pressure to be successful, pursuing the American Dream, keeping a good job and starting a family, which are not as easy to accomplish now (Twenge et al., 2010). However, as the Millennial generation begins to age, they may become more like previous generations, yet maintain their core values that may stay with them as they move through their life cycle (Taylor & Keeter, 2010).

In the workplace, Millennials, contrary to the Baby Boomer generation, strive for broader benefits (similar to those available in other developed countries like Germany) including more flexibility, more vacation time, casual dress, and the flexibility of working from home rather than in the office. Most studies consistently found that Generation X, and especially Millennials, express a different work ethic, believe that work is less central to their lives, value leisure, and seek more freedom and work-life balance than their Boomer counterparts. Of the three generations, Millennials are the only ones that do not cite “work ethic” as one of their claims to distinctiveness (Taylor & Keeter, 2010; Twenge, 2010). Millennials (like older adults) place parenthood and marriage far above career and financial success (Taylor & Keeter, 2010). Millennials are also less likely to follow the military model of leadership that worked so well in the 1960s, which is still prevalent in today’s law enforcement community.

**Generational Stress**

According to the American Psychological Association report entitled “Stress by Generation,” every generation has its own set of stressors (Walton, 2012). It is important to note that the demographic from which these percentages were obtained consisted of
the general public, and not those employed as police officers. According to Walton (2012) the stress differential among Millennials and Generation X shows a significant rise over the past 5 years; the largest sources of stress for Generation X and Millennials were money, employment, and the cost of housing. Relationship issues were also problematic for Millennials (63 %) and Generation X (65 %). Approximately 52 % of Millennials state that stress impacts their ability to sleep, as compared to 48 % of the Generation X population, and 37 % of the Baby Boomer population (Walton, 2012).

Walton (2012) examined the American Psychological Association’s *Stress in America 2010* report, which stated that 44 % of both Millennials and Generation X report experiencing irritability or anger due to stress, compared to 36 % of the Baby Boomer generation. Even though the preferred stress management technique across generations is exercising or walking, Millennials are more likely than Baby Boomers to engage in maladaptive coping like eating, drinking alcohol, and smoking to manage stress. Walton (2012) stated that Millennials were also more likely to meditate in response to stress than the older generations, but they and Generation Xers were more likely to play video games or browse the Internet when they were stressed.

There is limited research on Millennials in law enforcement; however, Leiter et al. (2010) conducted a study on the generational differences in distress tolerance among nurses. Although nurses are not police officers, they face high-stress life-or-death situations every day (Leiter et al., 2010). The research focused primarily on Generation X cohorts and the generational differences between nurses. The Millennial group had the largest proportion of nurses experiencing burnout, feelings of depersonalization, and
emotional exhaustion when compared to the Generation X and Baby Boomer cohorts (Leiter et al., 2010, p. 972). This study also compared them to Baby Boomer colleagues: Millennial nurses had significantly lower ratings when discussing levels of job satisfaction, and higher rates of cynicism and exhaustion. The research also revealed that the participants exhibited less enthusiasm for nursing, as well as a diminished inclination to identify with the work. These research findings suggest that younger nurses found their current occupation unfulfilling. A premature departure from the nursing profession may reflect an inability to cope with the pressures of the day-to-day stressors associated with this occupation (Leiter et al., 2010, p.972).

Leiter et al.(2010) state that researchers have been criticized for generalizing the characteristics of each generational cohort (Baby Boomers, Generation X, and Millennials); however, it does provide a reference point to explore life experiences including personal and professional behaviors and attitudes. The researchers also emphasized a need to focus on future research to include Millennials (Leiter et al., 2010). As Millennials begin to fill the gap created by the retiring Baby Boomer generation, law enforcement agencies should be interested in understanding the characteristics of the Millennial generation in the workplace in order to better assist them in understanding the complexities of law enforcement.

In summary, much of the research by Abdollahi (2002) and others has studied police stress in great detail; however, in all of the research available there have not been studies that focus on generational differences in police officer stress. Abdollahi (2002) suggests the importance of understanding the problem of police stress, the key issues involved, and the extent of the problem. Abdollahi (2002) recommends the examination
of the cause and effect of police stress. To evaluate police stress, it is necessary to collect and evaluate empirical evidence, then begin implementing solutions.

A full understanding of police stress will make it possible to decide what mix of primary (preventive), secondary (removal of adverse conditions) and tertiary (damage limitation) remedial measures should be taken in order to tackle the problem. (Abdollahi, 2002, p.16)

Adopting this strategy of developing a deeper understanding of the intricacies of law enforcement, might enable researchers to better understand the police stress phenomenon by shedding much needed light on the origins, antecedents, and their effects.

The fact that police officers are charged with a unique task (i.e., serving and protecting the public) and are entrusted with considerable power and authority to do so, attending to their physiological and psychological well-being should be of paramount importance (Abdollahi, 2002). In the final analysis of the literature, it is imperative to understand the relationship between stress and police officers, as well as develop strategies to minimize its effects.

**Moderators of Stress: Cognitive Hardiness and Coping**

In recent years, personality theorists and researchers have placed considerable attention on the construct of hardiness as an inner resource that may moderate the effects of stress on physical and mental health. Hardiness theory derives from existential psychology, and the emphasis pertains to the perception individuals construct about themselves in relation to their environments (Kobasa & Maddi, 1977). Those individuals who demonstrate cognitive hardiness believe they can discover meaning in situations
regardless of unsuccessful or successful encounters, and they can learn from their involvement in these experiences (Maddi, 2002).

Suzanne Kobasa first introduced psychological hardiness, while working with Illinois Bell Telephone executives in the late 1970s. She defined psychological hardiness as a personality construct comprised of three characteristics: commitment, control, and challenge (Kobasa, 1979). Kobasa found that executives undergoing major organizational stress could be characterized in two opposing ways. One group was vulnerable to health problems, performance problems, and work absenteeism, while another group tended to thrive in spite of the stressful circumstances experienced at work. Kobasa (1979) posited that personality characteristics predict the differences between the two groups, and used the phrase stress hardiness to describe the characteristics of the group that seemed to thrive under stress.

Salvatore Maddi (2002) also conceptualized hardiness as a combination of three attitudes of commitment, control, and challenge or the “3C’s” of hardiness. Individuals who rate high in the area of commitment are typically involved in their work, family and other interests. Those persons who rate high in the area of challenge tend to view life changes as opportunities to learn (Maddi, 2002). Finally, those who rate high in the area of control typically believe they have influence over life’s events (Nowack, 1989). When these components of hardiness are integrated they represent the daily attitude of one who exhibits cognitive hardiness. In other related studies, cognitive hardiness has been related to higher levels of performance, cohesion, and engagement, especially with military personnel and athletes (Bartone, 2000; Bartone, Johnsen, Eid, Brun, & Laberg, 2002;
Britt, Adler, & Bartone, 2001; Golby & Sheard, 2004). Persons who develop cognitive hardiness can turn adversity into opportunity, and actually create positive outcomes (Maddi, 2002).

An essential part of the conceptualization of the importance of hardiness for law enforcement is that the environmental circumstances encountered are inherently stressful. When interacting with people and the community every day, police officers continually experience stressful challenges and disruptions (Maddi, 2006).

Researchers have studied how police officers cope with stress, and have determined that officers utilize both adaptive and maladaptive coping strategies to alleviate stress (Clark-Miller & Brady, 2013). The adaptive coping strategies include trying to view the stressor positively, accepting social support (e.g., family and/or peers), and other attempts to alleviate the stressors. Maladaptive coping strategies include escalating emotions, or substance-related and addictive disorders. The ability to employ coping effectiveness and method varies by personality type, age, gender, proximity between the stressor and the types of coping behavior (Clark-Miller & Brady, 2013).

As an alternative, a consideration would be the utilization of a theoretically grounded instrument with predictive validity in its ability to impact variables related to stress. Researchers suggest that the most prominent theory in this domain is stress hardiness. Hardiness has not been well studied in the law enforcement community; however, there exists an expanding body of literature about it in the military literature, which may be applicable to law enforcement (Bartone, 1999; Bartone, Roland, Picano, & Williams, 2008; Bartone, Kelly, & Matthews, 2013; Florian, Mikulincer, & Taubman,
1995). Studies indicate that cognitive hardiness has been shown to promote wellness and performance in a variety of individuals with high stress and occupations including emergency nurses, combat troops, executives, and military reserve forces (Bartone, 1999; Maddi, 1999). Individuals who endorse hardiness factors tend to be more optimistic when appraising stress, whereas less hardy individuals tend to be more pessimistic and find change threatening (Carston & Gardner, 2009). Those endorsing hardiness factors believe they can control or influence what happens, and they enjoy new situations and challenges (Bartone, 2000). Also, they are internally motivated and create their own sense of purpose.

Conceptually, this is a personality profile well suited to the Special Forces occupation, which frequently requires its members to operate alone or in small teams, relatively isolated from supporting units, and in uncertain environments that will call for spontaneous solutions to unanticipated challenges (Bartone et al., 2008). Bartone et al.’s (2008) study of Army Special Forces candidates found that psychological hardiness makes a small but significant contribution to successful completion of a rigorous Army Special Forces Candidate school. They concluded that the Army Special Forces is a “high reliability occupation” (p. 80), where demands are high and failure can be disastrous.

Bartone et al. (2008) found that individuals who successfully complete the rigors of the Special Forces school showed significantly higher rates of personality hardiness when compared to other less specialized military occupations (e.g., a radar technician). This study makes a notable contribution to the growing evidence for positive personality hardiness traits that predict success in extreme environments. Considering the empirical
evidence regarding hardiness and stress resiliency, cognitive hardiness is attributed to successful performance under stressful conditions (Bartone et al., 2008).

A study by Kelly and Bartone (2005) found the psychological hardiness facet of commitment to be particularly important in predicting cadets who successfully complete the rigorous 6-week West Point Cadet Basic Training, and serves as a resistance resource in encounters with stressful conditions. Kelly and Bartone (2005) found that the hardiness component of “commitment” also predicts retention throughout the 4-year West Point training experience, and successful completion. Total hardiness and the hardiness component of commitment were also found to predict military program scores, which are grades received by cadets for their performance of military and leadership tasks.

Bartone, Kelly, and Matthews (2013) observed West Point cadets over a 7-year period, and found the hardiness factors of commitment and control in freshman military academy cadets to be significant predictors of adaptability as junior officers later in their careers. The military academy cadets, when exhibiting commitment, will do whatever it takes to achieve their major goals in life.

During their longitudinal study, Bartone et al. (2013) theorize that cadets who begin their academy training with a stronger level of commitment and internal sense of control are better able to capitalize and build on their experiences, even highly stressful ones, building confidence, self-efficacy, and an open learning orientation through the process.

Thus, highly hardy persons have stronger self-efficacy beliefs and confidence in
their ability to solve problems, leading to greater resiliency when dealing with stressful circumstances. A strong sense of control is perhaps especially important for positive, adaptive development in high-risk occupations such as the military and law enforcement, which typically have strict routines and protections in place due to the dangerous nature of the work (Bartone et al., 2008; Bartone et al., 2013).

While hardiness is often treated as a unitary construct, the present results show that the aspects of commitment, control, and challenge can operate somewhat differently with respect to important performance outcomes. This underscores the value of examining the hardiness facets separately, along with total hardiness scores. (Maddi, 2002; Bartone, 1999; Bartone et al., 2008; Bartone et al., 2013; Florian et al., 1995)

A limitation of Bartone et al.’s (2013) study concerns the generalizability of findings beyond the military occupation. Military training academies like West Point provide unusual environments and experiences, and the military occupation itself is not directly comparable to most other occupations, with the exception of law enforcement. However, the military does provide a valuable context for studying leadership performance under highly stressful and demanding conditions.

**Statement of the Problem**

The experiences police officers face while on the job can result in a wide range of adaptive and maladaptive behaviors. It is important to note that some officers appear to cope better than others with the organizational and occupational stress related to law enforcement. It is also important that we obtain a clear picture of how today’s Millennial generation police officers are managing stressful experiences they encounter while on
duty since the challenges of law enforcement have changed. Moreover, if we are able to identify differences in why some police officers react more adaptively to stress than others, professionals can begin to develop programs that will provide information about coping responses and processes associated with police stress. The purpose of this study is to examine cognitive hardiness as a potential protective factor in Millennial police officers (Maddi, Khoshaba, Harvey, Fazel & Resurreccion, 2011).

Cognitive hardiness is a combination of attitudes that provides the courage and motivation to do the hard, deliberate work of turning stressful circumstances from potential disasters into growth opportunities. Cognitive hardiness is often considered an important factor in psychological resilience or an individual’s pathway leading to resilient outcomes and remaining healthy when dealing with stress (Maddi et al., 2011).

**Rationale for the Study**

This research will seek to investigate whether cognitive hardiness will impact the copy skills in Millennial police officers such that they develop more resilience in their ability to deal with stressors associated with the law enforcement profession. Resilience is sometimes defined as a psychological process developed in response to intense life stressors that facilitates healthy functioning (Johnson et al., 2011). Bonanno, Galea, Bucciarelli, and Vlahov (2006) suggest variation exists in the definition of resilience, which include the absence of adverse symptoms following trauma. Other definitions of resilience include: sustained performance during an intense physical or psychological challenge or maintenance of a positive outlook despite having experienced significant adversity (Luthar & Cicchetti, 2000).

While the Millennial generation police officers are beginning their careers during
a time of intense criticism from the community and social media, hardy individuals tend to perceive their environment as satisfying and less menacing (Maddi, 2002). During this time of amplified scrutiny of daily police activities, stories of misconduct, and police assassinations, police officers may find themselves being unjustly and negatively categorized by the civilian public, thereby intensifying unwarranted occupational stress.

Those Millennial generation police officers who exhibit low cognitive hardiness may report feeling emotionally exhausted from their daily activities, powerless when confronted with external factors, and perceiving change as a challenge rather than a positive opportunity to grow (Maddi, 1999). For example, hardy persons tend to perceive stressful events as under their control and remain optimistic about their ability to manage stressors. Individuals who exhibit low hardiness tend to appraise events as negative and unmanageable (Maddi, 2002). The Millennial generation police officer who exhibits low cognitive hardiness, and less organizational commitment than those of previous generations could have an impact on retention, which may have an adverse effect on law enforcement (Twenge & Campbell, 2008).

It is proposed that when comparing “Baby Boomer” and Generation X to Millennial police officers those who exhibit cognitive hardiness will exhibit higher resilience, healthier coping abilities, and effective performance under a range of stressful conditions. Police officers who exhibit a strong commitment to the profession will utilize their cognitive resiliency to create a more engaging and worthwhile working environment. Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential threats more effectively (Maddi, 2002). This study
recruited three generations of police officers from a large urban area on the West Coast with a focus on the differences observed among Millennials.

**Research Questions and Hypotheses**

**Research Question 1:** Do the coping abilities of Baby Boomer and Generation X police officers as a whole under occupational stress differ from those of Millennial police officers in terms of emotional distress and avoidance?

**H1a:** Millennial police officers will report greater levels of emotional distress under occupational stress than officers in the Baby Boomer generation and Generation X as a whole.

**H1b:** Millennial police officers will report greater levels of avoidance under occupational and organizational stress than officers in the Baby Boomer generation and Generation X as a whole.

**Research Question 2:** Does exposure to occupational and organization stressors contribute to the Millennial police officers having higher levels of job dissatisfaction than those of Generation X or Baby Boomer generation police officers as a whole?

**H2a:** There will be greater levels of job dissatisfaction in Millennial police officers in comparison with those of Generation X and Baby Boomer police officers as a whole.

**H2b:** Higher levels of emotional distress in Millennial police officers will be associated with greater job dissatisfaction in comparison with those of Generation X and Baby Boomer police officers as a whole.

**H2c:** Higher levels of avoidance behaviors in Millennial police officers will be associated with greater job dissatisfaction in comparison with those of Generation X and Baby Boomer police officers as a whole.
Research Question 3: Do differences in cognitive hardiness account for the generational differences in occupational stress/job dissatisfaction in police officers?

H3a: Cognitive hardiness will moderate the relationship between generational class and emotional distress in police officers such that cognitive hardiness will diminish the relationship.

H3b: Cognitive hardiness will moderate the relationship between generational class and avoidance behavior in police officers such that cognitive hardiness will diminish the relationship.

CHAPTER THREE: METHODS

This study utilized hierarchical regressions and associated significance tests in which participants’ levels of job dissatisfaction and cognitive hardiness were assessed via survey. A convenience sample of participants (i.e., police officers who have completed a field training program and one year of law enforcement service) completed four measures: a general questionnaire, a survey assessing levels of cognitive hardiness, a survey to assess the emotional effects and avoidance effects of coping, and a survey to assess levels of dysphoria or job dissatisfaction.

All participants were asked to provide informed consent (Appendix C). Upon completion of a demographic survey, the participants completed an 18-item questionnaire (Personal View Survey III Revised) assessing personal hardiness. This assessment is not included in the appendices because of copyright. Participants were asked to complete (Multiple Affective Adjective Checklist) a brief checklist of 132 adjectives arranged in alphabetical order (Appendix F). This questionnaire assessed emotional states, and in this study, it was used to obtain a measure of dissatisfaction.
Finally, participants were asked to complete (the Coping Inventory for Stressful Situations) a 48–item assessment, which distinguishes basic coping strategies. For the purpose of this study only 32–item Emotion (E) Scales and the Avoidance (A) Scales were used (Appendix G).

Participants

The participants consisted of police officers (n=146) from a major metropolitan police department in the San Francisco Bay Area, separated into two groups: a combined Baby Boomer/Generation X cohort and a Millennial cohort, and coded to exclude any potential for identifiers. In order to ensure a good sample size was met, an a priori power analysis (with a statistical confidence of .80 and probability level of .05) determined that the minimum sample size should be at least 143 participants (see below).

G Power was configured to analyze a linear multiple regression with fixed coefficients (i.e., based on the general linear model rather than the generalized linear model). The effect size was set at 0.10, a conservative interpretation of a moderate effect size (Cohen, 1988, 1992); by convention the power (1-β) was set to 0.80 (an 80% probability), the number of predictors was set to 6 as noted above, and the alpha level was set to 0.05. This resulted in a sample size (n) of 146. Table 1 shows the inputs and outputs of this power analysis. Figure 1 graphically depicts the critical F determined in this analysis in relation to alpha and beta. Figure 2 is a graph of various power values against sample sizes for the effect size, alpha, and number of predictors used in this analysis.
Table 1
*Analysis Inputs and Outputs*

<table>
<thead>
<tr>
<th>Input Parameters</th>
<th>Output Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect Size</td>
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<tr>
<td>Number Predictors</td>
<td>Denominator df</td>
</tr>
<tr>
<td>6</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td>Sample Size</td>
</tr>
<tr>
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<td>146</td>
</tr>
<tr>
<td></td>
<td>Actual Power</td>
</tr>
<tr>
<td></td>
<td>0.8011495</td>
</tr>
</tbody>
</table>

*Figure 1.* Critical F in relation to alpha and beta.
Figure 2. Power versus sample size.

The demographic data used for this study included gender, relationship status, years of education, age, number of children, ethnicity, and certification status as a sworn police officer, who graduated from the San Francisco Police Department Regional Training Academy who has completed the Field Training Program and one year of law enforcement service. It was expected that the participants included in this study would be ethnically and socially diverse.

Measures

Personal Views Survey III Revised (PVS III R). The Personal Views Survey III Revised was used to operationalize the Cognitive Hardiness construct. The PVS III R is published by the Hardiness Institute, Inc. (Maddi & Khoshaba, 2000). According to the manual, the PVS III R might be thought of as the measurement of existential courage (Maddi & Khoshaba, 2000). The PVS III R is used to measure personality hardiness and generates three subscales scores and one composite score, which includes Commitment,
Challenge, and Control (i.e., total hardiness). The PVS III R utilizes 18 items measured on a 4-point Likert scale requiring about 5-10 minutes to complete (Maddi & Khoshaba, 2000). Validity for the PVS III R has been established by the authors Maddi and Khoshaba (2000) through factor analysis of a sample of 3,000 adults and adolescents, confirming the existence of three interrelated components of commitment, control, and challenge that comprise personality hardiness. Maddi and Khoshaba (2000) cite internal consistency for each of the following individual components – commitment, .70 to .75; control, .61 to .84; challenge, .60 to .71; and total hardiness, .80 to .88. Stability for total hardiness over 3 and 6 months is noted at .58 and .57, respectively.

**Multiple Affective Adjective Checklist – Revised (MAACL-R).** The second measure was the Multiple Affective Adjective Checklist – Revised (MAACL-R). MAACL-R is one of the most widely used instruments, and was used to operationalize the levels of dysphoria or job dissatisfaction. The MAACL-R is a brief checklist of 132 adjectives arranged in alphabetical order and available in State and Trait forms. The difference in the two forms is in the instrument directions (Lubin & Zuckerman, 1999). The Trait form asks participants to check adjectives describing how they generally feel while the State form asks participants how they currently feel. The State form shows good internal consistency with alphas ranging from 0.77 on the Sensation Seeking scale to 0.92 on the Positive Affect and Sensation Seeking Composite scale. While the Trait form of the MAACL-R has acceptable retest reliability, the State form has low retest reliability. The Multiple Affect Adjective Checklist together with the current revised version has been used in over 1,900 published articles (Lubin & Zuckerman, 1999, p. 1).
Coping Inventory for Stressful Situations (CISS). The final measure utilized was the Coping Inventory for Stressful Situations (CISS). This instrument was used to operationalize Emotional effects of coping and the Avoidance effects of coping. The CISS measures three types of coping styles, and is used to determine the preferred coping style of an individual and is useful in assisting with assessment for stress. The development of the CISS was undertaken for three reasons: a) The relative lack of consensus among the numerous researchers in the area of coping; b) the psychometric weakness of many existing scales (e.g., relatively low reliabilities, unstable and unsubstantiated factor structure, and lack of empirical support); and c) the need for a reliable and valid coping measure to test the interaction model of stress, anxiety, and coping (Endler & Parker, 1999).

The CISS is a 48-item instrument that distinguishes three basic coping strategies with 16 items per scale. Task-Oriented (T scale), Emotion-Oriented (E scale), and Avoidance-Oriented (A scale). Exploratory factor analysis of the 48-item inventory has shown that these three subscales correspond to separate factors. For the purpose of this study only the Emotion (E) Scales and the Avoidance (A) Scales were used. The Emotion (E) scales describe emotional reactions that are self-oriented. The aim is to reduce stress (but this is not always successful). Reactions include emotional responses (e.g., blame myself for being too emotional, get angry, become tense), self-preoccupation, and fantasizing (daydreaming reactions). In some cases, the reaction actually increases stress (e.g., become very upset, become very tense). The reaction is oriented towards the person. The Avoidance (A) scales describe activities and cognitive changes aimed at avoiding the stressful situation. This can occur by distracting oneself
with other situations or tasks (task oriented) or by social diversion (person oriented) as a means of alleviating stress (Endler & Parker, 1999). Additionally, the T, E, and A scales were factor analyzed separately. Internal reliability scores (Cronbach’s alpha) of the CISS are reported to be good, ranging from .72 to .92. Task and Emotion scales had the highest reliability of .68 for both male and female populations (Brands, Kohler, Stapert, Wade, & Heugten, 2014)

**Procedures**

All participants are currently active serving members of the San Francisco Police Department. Participants were required to complete and sign all consent forms. For the purpose of this study, participants’ information was separated into two groups: Baby Boomer and Generation X cohorts in one group and the Millennial cohorts in a second group. Participants were advised that their participation would assist the San Francisco Police Department in furthering the understanding of occupational stress of police officers of all three generational (Baby Boomer, Generation X, and Millennial generation) cohorts.

An assessment package containing four self-report questionnaires, one of which consisted of demographic information, was provided to all participants during their scheduled “Roll-Call Training” at the San Francisco Police Department. Each package included an Informed Consent, which described the nature of the study as well as inclusion criteria. The inclusion criteria specified that only persons who are employed as San Francisco Police Officers were eligible to participate in the study. Furthermore, the Informed Consent discussed that participants would remain anonymous as a result of the confidential measures of the assessment.
Participants were informed that their participation is voluntary and that they may choose to stop completion of the self-report at any time if they experienced any discomfort. My contact information, as the researcher of the study, was provided on the Informed Consent if any questions arose for participants about the study. Completed questionnaires were returned to me and placed in a secure file located at the San Francisco Police Professional Standards and Principled Policing Bureau in order to assure anonymity.

**Data Analysis**

This section contains planned assumption checks, reporting of descriptive statistics, and testing of hypotheses with inferential statistics. Then an overview of inferential statistical analysis plan including a restatement of the research questions, hypotheses, and how it was tested in the regression sequence is presented. Finally, a detailed inferential statistical plan will then be presented to discuss the statistical methodology used to analyze the data.

**Approach to Assumption Checking and Presentation of Descriptive Statistics**

Prior to conducting a hierarchical regression, the relevant assumptions of this statistical analysis were tested, checking for outliers and malingering responses and checking for normality of the metric variables. First, a sample size of 143 was deemed adequate given three hypotheses independent variables to be included in the analysis. The assumption of singularity was also met as the independent variables (Avoidance Effects of Coping, Emotional Effects of Coping, Job Dissatisfaction).

Then, the variables of interest were evaluated using descriptive statistics. This exposition of descriptive statistics includes Pearson correlations for the study’s
continuous variables. It will also include valid sample size values, means, and standard deviations of the metric variables.

**Inferential Statistical Analysis Plan Overview**

The following is a restatement of the research questions, hypotheses and how each hypothesis was tested in the regression sequence; as well as the proposed data analysis.

**Research Question 1:** Do the coping abilities of Baby Boomer and Generation X police officers as a whole under occupational stress differ from those of Millennial police officers in terms of emotional distress and avoidance? Note that the combination of Research Question 1 and Research Question 2 implies the relationship between Job Dissatisfaction and Generational Classes is mediated by both Emotional Effects and Avoidance Effects of Coping (a double mediation).

**Research Question 2:** Does exposure to occupational and organization stressors contribute to the Millennial police officers having higher levels of job dissatisfaction than from those of Generation X or Baby Boomer generation police officers as a whole? As noted with Research Question 1, the combination of Research Question 1 and Research Question 2 implies the relationship between Job Dissatisfaction and Generational Classes is mediated by both Emotional Effects and Avoidance Effects of Coping (a double mediation).

**Research Question 3:** Do differences in cognitive hardiness account for the generational differences in occupational stress/job dissatisfaction in police officers? This research question addresses the possible moderation of occupational stress/job dissatisfaction by differences in cognitive hardiness. Research Question 3 means that both mediations of Research Questions 1 and 2 are moderated by Cognitive Hardiness.
H1a: Millennial police officers will report greater levels of emotional distress under occupational stress than officers in the Baby Boomer generation and Generation X as a whole.

H1b: Millennial police officers will report greater levels of avoidance under occupational and organizational stress than officers in the Baby Boomer generation and Generation X as a whole.

The testing of these hypotheses is detailed below in Step 2 of the regression sequence, and specifically by equations (4) and (8) of that step.

H2a: There will be greater levels of job dissatisfaction in Millennial police officers in comparison with those of Generation X and Baby Boomer police officers as a whole.

H2b: Higher levels of emotional distress in Millennial police officers will be associated with greater job dissatisfaction in comparison with those of Generation X and Baby Boomer police officers as a whole.

H2c: Higher levels of avoidance behaviors in Millennial police officers will be associated with greater job dissatisfaction in comparison with those of Generation X and Baby Boomer police officers as a whole.

The testing of these hypotheses is detailed below in Step 3 and Step 4 of the regression sequence, and specifically by equations (12) and (13) of those steps.

H3a: Cognitive hardiness will moderate the relationship between generational class and emotional distress in police officers such that cognitive hardiness will diminish the relationship.
H3b: Cognitive hardiness will moderate the relationship between generational class and avoidance behavior in police officers such that cognitive hardiness will diminish the relationship.

The testing of these hypotheses is detailed below in Step 2 of the regression sequence, and specifically by equations (5), (6), (9), and (10) of this step.

**Detailed Inferential Statistical Plan**

The statistical aspects of this study were operationalized with a set of hierarchical regressions and associated significance tests.

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**Figure 3.** A moderated doubly mediated regression

As the above conceptual diagram (Figure 3) shows, this study’s hypotheses imply a moderated doubly-mediated regression. The operational (or statistical) model, diagrammed (Figure 4) below, graphically delineates the statistical approach used to test
the above conceptual model. Importantly, this statistical model shows that the study's moderation was operationalized with an interaction term composed of the theorized moderator and the study's independent variable, as described in more detail in the regression sequence below.

![Diagram](image)

*Figure 4. Predictors of police officer job dissatisfaction (statistical model).*

Testing a moderated mediation entails a number of tradeoffs. A discussion of these tradeoffs is presented in Appendix A of this document. As a consequence of making tradeoffs to present the most complete analysis, a hybrid approach to analyzing the moderated mediation was chosen (detailed below). Essentially, one could implement a series of regressions to test the implied moderated mediation, or one could use a more automated approach by using a statistical package plug-in. *PROCESS* (Hayes, 2013) is such a plug-in and does the regression sequencing and presents critical values for the
analysis of the moderated mediation. However, as explained in Appendix A, PROCESS does not present all the data that will be important for a complete understanding of the results. On the other hand, one aspect of PROCESS output related to the mediation’s indirect effect is very difficult to replicate without this plug-in (see the subsection Use of PROCESS plug-in below). Hence, PROCESS was used in a hybrid approach, combining a series of hierarchical regressions with the PROCESS plug-in to obtain a comprehensive reporting of the study’s results.

As part of developing an analysis strategy, the hybrid approach was pre-tested using test data that mimicked the data types implicit for each variable in the study. Output of the regression sequence approach and the PROCESS approach were then compared. Where both approaches developed the same statistics (there was considerable overlap), both approaches produced the same results, to three decimal places. Hence, this hybrid scheme was deemed a robust approach for this study.

The Regression Sequence

The analysis approach taken includes a four-step series of hierarchical regressions (Kenny, 2015). Each step tests particular aspects of the study’s mediation and moderation effects.

Step 1: Total effect test.

Step 1 is a two-stage hierarchical regression, expressed below as equations (1) and (2). This hierarchical regression tests whether the dependent variable, Job Dissatisfaction, is a

---

1 Symbology in all equations is consistent with the symbology used in Figure 1.
2 In order to keep subscripting relatively simple, subscripts are unique to each equation in the four steps.
function of the independent variable Generational Class, after taking into consideration the study's control variables. Though recent literature (e.g., Hayes, 2013) suggests that this step is not essential to prove mediation, it is maintained in this equation sequence because it provides the simplest way to determine the mediation's total effect and that effect's significance. Total effect significance is an important consideration in determining mediation (see below under Tests for Significance).

\[
D = b_0 + b_1C_1 + \ldots + b_nC_n
\] (1)

\[
D = b_0 + b_1C_1 + \ldots + b_nC_n + b_{n+1}X
\] (2)

where: \(D\) is the study's dependent variable, Job Dissatisfaction, 
\(X\) is the study's independent variable, Generational Class, 
\(C_i\) is a control variable and 
\(b_0\) is a constant.

**Step 2: Testing moderation and portions of the mediations.**

Step 2 embodies two separate hierarchical regressions: one for the potential mediator Emotional Effects of Coping and another for the potential mediator Avoidance Effects of Coping. Step 2 tests each mediator's relationship to the independent variable, Generational Class (Hypotheses 1a and 1b) and the potential moderation of those relationships by Cognitive Hardiness (Hypotheses 3a and 3b). The hierarchical regression for Emotional Effects of Coping is expressed by equations (3) through (6).

The regression for Avoidance Effects of Coping is expressed by equations (7) through (10).

\[
M_1 = b_0 + b_1C_1 + \ldots + b_nC_n
\] (3)

\[
M_1 = b_0 + b_1C_1 + \ldots + b_nC_n + b_{n+1}X
\] (4)

\[
M_1 = b_0 + b_1C_1 + \ldots + b_nC_n + b_{n+1}X + b_{n+2}W
\] (5)
\[
M_1 = b_0 + b_1C_1 + \ldots + b_n C_n + b_{n+1}X + b_{n+2}W + b_{n+3}WX
\] (6)

\[
M_2 = b_0 + b_1C_1 + \ldots + b_n C_n
\] (7)

\[
M_3 = b_0 + b_1C_1 + \ldots + b_n C_n + b_{n+1}X
\] (8)

\[
M_4 = b_0 + b_1C_1 + \ldots + b_n C_n + b_{n+1}X + b_{n+2}W
\] (9)

\[
M_5 = b_0 + b_1C_1 + \ldots + b_n C_n + b_{n+1}X + b_{n+2}W + b_{n+3}WX
\] (10)

where: \(M_1\) is the potential mediator, Emotional Effects of Coping,
\(M_2\) is the potential mediator, Avoidance Effects of Coping,
\(X\) is the study's independent variable, Generational Class,
\(W\) is the potential moderator, Cognitive Hardiness,
\(WX\) is the interaction of the potential moderator and the
independent variable,
\(C_i\) is a control variable and
\(b_0\) is a constant.

Equations (3) and (7) first enter the controls into each hierarchical regression.

The next equation in each sequence, equations (4) and (8), tests the effect of the
independent variable, Generational Class, upon each of the potential mediators, a
relationship necessary to have mediation. This stage tests Hypotheses 1a and 1b (see
Figure 4).

Equations (5) and (9) enter the potential moderator (W), Cognitive Hardiness, into
the hierarchical regression for each of the potential mediators. Though earlier literature
required significance at this stage for moderation (e.g., Jaccard & Turrisi, 2003), this step
is no longer considered necessary to prove moderation. However, if moderation is not
upheld, this step is still important since significance at this stage would indicate that the
potential moderator is in fact a direct predictor variable of Coping, not a moderator of the
Coping/Generation relationship.
Finally, equations (6) and (10) add the interaction term $WX$ (i.e., Cognitive Hardiness * Generational Class) into the hierarchical regressions for each of the Coping variables. This is the critical test for moderation (Hypotheses 3a and 3b).

**Step 3: Completing the indirect path.**

Step 3 returns to testing more aspects of the potential mediation. Specifically, the step tests whether the dependent variable (Job Dissatisfaction) is a function of either, both, or neither of the potential mediators (Emotional and Avoidance aspects of Coping). Equations (11) and (12) are run as one hierarchical regression. This completes testing of the indirect effect chains Generational Class $\rightarrow$ Emotional Effects of Coping $\rightarrow$ Job Dissatisfaction, and Generational Class $\rightarrow$ Avoidance Effects of Coping $\rightarrow$ Job Dissatisfaction. Significance in these regressions is, in part, necessary for mediation, and upholding Hypotheses 2b and 2c.

$$D = b_0 + b_1C_1 + \ldots + b_nC_n$$  \hspace{1cm} (11)

$$D = b_0 + b_1C_1 + \ldots + b_nC_n + b_{n+1}M_1 + b_{n+2}M_2$$  \hspace{1cm} (12)

*where:* $D$ is the study’s dependent variable, Job Dissatisfaction, 

$M_1$ is the potential mediator, Emotional Effects of Coping, 

$M_2$ is the potential mediator, Avoidance Effects of Coping, 

$C_i$ is a control variable and 

$b_0$ is a constant.

**Step 4: Completing the regression aspects of mediation testing.**

Step 4 hierarchically adds one more stage to the hierarchical regression done in Step 3. Specifically, it adds the independent variable, Generational Class, to the regression. If mediation of either Coping effect is ascertained, and the coefficient of Generational Class
(X) has no significance in this hierarchical regression, the effect of Generational Class upon Job Dissatisfaction is fully mediated\(^3\). If mediation of either Coping effect is ascertained, and the coefficient of (X) in this step is significant, partial mediation exists, and Hypothesis 2a can be upheld.

\[
D = b_0 + b_1C_1 + \ldots + b_nC_n + b_{n+1}M_1 + b_{n+2}M_2 + b_{n+3}X
\]  

(13)

where: \(D\) is the study’s dependent variable, Job Dissatisfaction,
\(M_1\) is the potential mediator, Emotional Effects of Coping,
\(M_2\) is the potential mediator, Avoidance Effects of Coping,
\(X\) is the study’s independent variable, Generational Class,
\(C_i\) is a control variable and
\(b_0\) is a constant.

Tests for Significance

Recent literature on mediation effects suggests that mediation is best discovered not only through the direct and indirect paths associated with the predictor, mediator, and criterion variables, but also with additional significance tests (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Specifically, mediation should be analyzed in terms of (a) the significance of the independent variable relationship with a potential mediator, (b) the significance of the direct effect, (c) the significance of the indirect effect, and (d) the significance of the total effect (Hayes, 2013; Kenny, Kashy, & Bolger, 1998).

\(^3\) This determination of a full vs. partial mediation is usually valid, but has exceptions (Falk, 2016).
The significance of the independent variable to the mediators’ relationships was ascertained by examining the significance of the coefficient of $X$ (Generational Class) in equations (4) and (8) in Step 2 above. Equation (4) tests the significance related to $M_1$ (the Emotional Effects of Coping), and equation (8) tests the significance related to $M_2$ (the Avoidance Effects of Coping).

The significance of the direct effect of the independent variable upon the dependent variable was ascertained by examining the significance of the coefficient of $X$ (Generational Class) in equation (13) in Step 4 above. The significance of the total effect, the effects of both the independent variable and the mediators on the dependent variable, was ascertained by examining the coefficient of $X$ in equation (2) in Step 1 above.

The final and most difficult significance to obtain is the significance of the indirect effect of the mediators. This effect is the product of the coefficients in the indirect path: the coefficient of $X$ in equations (4) and (8) in Step 2 (for Emotional and Avoidance Coping respectively), and the coefficient of $M_1$ and $M_2$ (for Emotional and Avoidance Coping respectively) in equation (12) of Step 3. Of course, the product of these terms is easily computed, but their significance is more difficult to obtain. One approach would be to execute a Sobel Test (Sobel, 1982). However, the Sobel Test assumes that the distribution of the product term is normal – which is rarely the case (Kenny, 2015). Another approach would be bootstrapping the product terms, which can be accomplished by a somewhat complex series of steps with a statistical package that can perform bootstrapping. Hayes’ PROCESS plug-in also obtains a confidence interval for the indirect effect in this way (as well as performing many other mediation and moderation functions). Finally, a Monte Carlo simulation approach (Falk, 2016) could be
used to obtain a confidence interval for the indirect effect. One way to implement the Monte Carlo approach would be to use Hayes’ *McMed* macro for SPSS. Use of the macro is a relatively simple process, which produces just the confidence interval needed for the indirect effect. Because of its relatively straightforward characteristics, the Monte Carlo approach using *McMed* was used in this study to obtain the confidence interval for the indirect effect.

*Use of PROCESS Plug-in*

Though the approach for obtaining the significance of the indirect effect described above produces the necessary statistic for the mediation analysis, this study incorporates not just a simple mediation but a moderated one. Hence, various levels of a moderator will affect the relevant part of the mediation relationship: the independent variable to mediator relationship. This presents a situation where one could have *conditional indirect effects*, conditioned on various values of the moderator. Hayes’ *PROCESS* plug-in, using its model 7 for a moderated mediation, produces such confidence intervals for an indirect effect. It chooses several values of the moderator and produces a confidence interval for each. Though not strictly necessary for the testing of this study’s hypotheses, these conditional indirect effect statistics provide a more nuanced understanding of the relationships of variables in this study. Hence, *PROCESS* was used to produce and analyze the conditional indirect effects for each of the mediators of the Coping variables.

*Effect Size Determination*

Whenever statistical significance is found, a subsequent issue becomes the effect size related to this significant result. An important rationale for any study such as this is
the need to inform practice (usually clinical psychology practices in the case of this study). Usually, practitioners can safely ignore study effects that are small in size since they are unlikely to make a difference to practice outcomes. However, moderate or large effects should be important to practitioners. Effect sizes discoverable in this study are therefore an important consideration and are reported together with their implications, as appropriate.

To that end, effect sizes are reported in several ways, based on the particular variable or regression block. All variables in the regressions are reported with their partial correlations. Beta values (standardized coefficients) are also reported for each variable. This will allow contrasting of the relative effects of variables when a regression has more than one significant predictor (e.g., the two mediators). To make available effect sizes for an entire regression block (equivalent to each equation in the regression sequence above), adjusted $R^2$ for that block is reported.

Finally, there is much discussion in the mediation literature about the way one might measure the strength (i.e., the effect size) of a mediation. (see Jose, 2013 for some discussion of the various approaches). For this study, the effect size of the mediation was determined for each of the two potential mediators by computing the ratio of the coefficient of the indirect effect by the coefficient of the total effect.

**Diagnostic Checks**

In addition to the above analysis, each regression step (see the regression sequence above) has been checked for a violation of one or more of the assumptions of linear regression. In that category belong checks for nonlinearity of variable relationships, normality of variables, normality of a hierarchical regression’s error term,
multicollinearity of predictor variables, and heteroscedasticity (unequal variance of the error terms across the range of the criterion variable). Checks for these assumption violations were made on the validated sample data.

Normality of variables was ascertained with histograms of each variable. Multicollinearity of predictor variables was examined via the Pearson correlation matrix of all the study’s variables (Pearson correlations higher than 0.7 suggest possible multicollinearity). Then variance inflation factors (VIFs) for each predictor in a regression are reported. VIFs higher than 10 were used to indicate a multicollinearity problem, casting doubt on the accuracy of the affected coefficient – and therefore the coefficient’s significance. Normality of the error terms of a regression step were assessed via a histogram of the error terms. Nonlinearity of predictor/criterion relationships, and heteroscedasticity of a regression step was identified with a plot of the studentized residuals against the standardized predicted value. A regression without a nonlinear relationship and without heteroscedasticity will have a scatterplot with no particular pattern. Distinct patterns indicate particular problems (see Hair, Black, Babin, & Anderson, 2010 for a discussion of these patterns).

**Remedies**

Not all assumption violations are correctable or have work-arounds. However, some violations can be overcome. In that category are variables with pronounced non-normality. A way to overcome this problem, often cited in the literature (Hair et al., 2010), is to transform the variable with one of a variety of mathematical transformations (e.g., taking the square root, taking the natural log, taking the inverse, taking the arcsine). These transformations can improve the situation somewhat but only in some cases. Some
types of non-normality cannot be corrected this way. For example, no transformation can convert a bimodal distribution to a normal one. Moreover, these transformations change the meaning of the regression coefficient in often difficult-to-envision ways. Though these changes will not affect significance levels, they will make effect size determination problematic. For example, comparing beta values of transformed predictors in order to understand relative effect sizes will produce misleading results.

Fortunately, within the last few years many comprehensive statistical packages have implemented bootstrapping (e.g., SPSS, SAS, Stata). Bootstrapping a regression eliminates the normal distribution requirement for a variable in a regression. It does this by leveraging the “regression to the mean” effect. In bootstrapping, the study data are subsampled with replacement, and the regression is run repeatedly with a different subsample (1,000 iterations or more is suggested in the literature Davison & Hinkley, 1999; Vogt & Johnson, 2011). With modern computers 1,000 bootstrapped iterations of a regression with multiple predictors can be run in a few minutes or less.

After the study’s data were examined, a variable with a severely non-normal distribution was observed and a bootstrapped regression was performed whenever that variable was used. This eliminated validity issues in regressions with the offending variable.

CHAPTER FOUR: RESULTS

Data Acquisition

At the time of the study, all participants were active serving members of the San Francisco Police Department. The participants were assigned to six of the busiest district stations located in the city and county of San Francisco, which include Police
Headquarters (PHQ), Bayview, Southern, Northern, Ingleside, and Mission Police Stations. The meeting with study participants occurred during “Roll-Call Training” at the beginning of their daily work shift. The participants were advised that their participation would assist the San Francisco Police Department in furthering the understanding of occupational stress of police officers of all three generational (Baby Boomer, Generation X, and Millennial) cohorts. Prior to taking part in the study, the participants were requested to complete and sign all consent forms. For the purpose of this study, participant’s information was separated into two groups: Cohort “A” which included Baby Boomer and Generation X cohorts, and Cohort “B” consisting of Millennials.

An assessment package containing four self-report questionnaires, one of which consisted of demographic information, was provided to all participants. Each package included an Informed Consent, which described the nature of the study as well as inclusion criteria. Inclusion criteria indicated that only persons who are employed as San Francisco police officers were eligible to participate in the study. Furthermore, the Informed Consent discussed that participants would remain anonymous as a result of the confidential measures of the assessment.

Participants were also informed that their participation is voluntary and that they may choose to stop completion of the self-report at any time if they experience any discomfort. As the researcher, my contact information was provided on the Informed Consent if any questions arose for participants about the study. Completed questionnaires were returned to me in sealed numbered envelopes, which were time stamped and initialed in order to assure anonymity. This study was also submitted and approved by the
Fielding Institutional Review Board (IRB).

**Utilized Data**

Data utilized for this analysis came from (a) a demographic data instrument, (b) the Multiple Affective Adjective Checklist, Revised (MAACL) instrument, (c) the Coping Inventory for Stressful Situations (CISS), and (d) the Personal Views Survey III-R (PVS). Selected scales from each of these instruments were mapped to this study’s control variables (see details below), the dependent variable, the independent variable, the two mediator variables, and the moderator variable. The mapping of the non-control variables is detailed in Table 2 below.

**Table 2**

<table>
<thead>
<tr>
<th>Study Construct</th>
<th>Instrument</th>
<th>Scale</th>
<th>Statistical Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Job Dissatisfaction or Dysphoria</td>
<td>MAACL</td>
<td>Dysphoria State T-Score</td>
<td>Dependent Variable (DV)</td>
</tr>
<tr>
<td>2 Generational Class</td>
<td>(multiple)</td>
<td>Cohort (Millennial/Boomer)</td>
<td>Independent Variable (IV)</td>
</tr>
<tr>
<td>3 Emotional Effects of Coping</td>
<td>CISS</td>
<td>Emotion T-Score</td>
<td>Mediator 1</td>
</tr>
<tr>
<td>4 Avoidance Effects of Coping</td>
<td>CISS</td>
<td>Avoidance T-Score</td>
<td>Mediator 2</td>
</tr>
<tr>
<td>5 Cognitive Hardiness</td>
<td>PVS</td>
<td>Hardiness Total Score</td>
<td>Moderator</td>
</tr>
</tbody>
</table>

**Data Conditioning**

Preparation of data for the study included several critical pre-analysis operations. These operations were performed in the order of their descriptions below. All data conditioning results were checked for boundary conditions, and for accuracy by manual computation of randomly selected items.

**Dataset Integration and Coding**

The data for this study, obtained from the four instruments noted above, were first compiled into four spreadsheets: one for each instrument. These spreadsheets were then
integrated into a single Statistical Package for the Social Sciences (SPSS) data file. All
descriptive statistics and regressions reported for this study sample were from this SPSS
data file.

Because this study hypothesized a moderation effect in two places, an interaction
term was constructed for the operationalization of that moderation. Specifically, the
Cohort variable and Hardiness Total Score variable values were multiplied for each
respondent in the survey to form the necessary interaction term. This operationalization
can also be seen in equations 6 and 10 presented later in the discussion of results (the
term $WX$).

Data Validity Checks

Following the data cleaning and variable construction operations, cases were
subjected to general checks designed to remove any invalid responses including
malingering or from respondents’ misinterpretations. In this category, there were data
checks for out-of-range or extreme answers (outliers) and answers that could not be
possible, based on the meaning of a variable. Histograms (with normal curves overlaid)
and boxplots for the regression-utilized metric and ordinal variables in the sample were
examined in this validity-checking process. Figures 5 through 18 below are the
histograms (with normal curves overlaid) and boxplots of all the metric and ordinal
variables in the study.

Since this study employs several regressions, and since one of the assumptions of
regressions is that metric and ordinal variables are normally distributed, the histograms of
such variables were examined for approximate normality. As the figures below show, the
variables Age, Education, Emotional T-Score, and Total Hardiness are approximately
Comparative Study of Cognitive Hardiness in Three Generations of Police Officers

normally distributed. But Years of Service, Dysphoria or Job Dissatisfaction, and the Avoidance T-Score are unequivocally non-normally distributed. The method of dealing with this statistical problem is outlined in the subsection A Statistical Issue Related to the Regressions below.

**Figure 5.** Histogram, Age

**Figure 6.** Box Plot, Age

**Figure 7.** Histogram, Years of Service

**Figure 8.** Box Plot, Years of Service

**Figure 9.** Histogram, Education

**Figure 10.** Box Plot, Education
The boxplots of the variables were examined for outliers and malingering responses since outliers could bias the results of the study’s regressions: Outliers have a disproportionate effect on results produced by regression’s ordinary least squares (OLS) algorithm (Hair et al. 2010).

The boxplots for Age (Figure 6), Years of Service (Figure 8), and Avoidance (Figure 16) show no outliers. But Education (Figure 10), Dysphoria or Job Dissatisfaction (Figure 12), Emotion (Figure 14), and Total Hardiness (Figure 18) do exhibit some outliers. Each of the outliers for each of these variables was carefully examined to see if malingering or misunderstanding of one or more questions was a likely cause of an outlier. In all cases no such difficulty was apparent. Moreover, for each of the variables with outliers, a more plausible cause was present. Specifically, Age had one response above the whiskers of the boxplot, but a single respondent with much higher education than the rest of the sample was entirely plausible. Dysphoria or Job Dissatisfaction had many responses above the whiskers, but as the Dysphoria or Job Dissatisfaction histogram shows, this is a very skewed distribution (a clear majority of the respondents reported low dysphoria or job dissatisfaction); hence these outliers are a natural outcome of the skewness. Emotion had one high outlier and Total Hardiness had two low outliers. But again, having one respondent with considerable emotional effects of coping, and one or two respondents with quite low hardiness would be natural in a sample such as the one utilized in this study. In fact, if a few outliers did not appear, it would be a greater cause of concern (e.g., malingering or pressure exerted on respondents). Hence, without any evidence of malingering or misunderstanding, and plausible reasons for all outliers, no cases were removed from the study.
Finally, the sample was examined for missing data. Only one respondent out of the study’s 146 respondents failed to complete all the instruments (the PVS). Hence, the list wise elimination default of the regressions was used to eliminate this respondent from the study.

**Descriptive Statistics**

Histograms of the metric variables studied are presented above under *Data Validity Checks*. *Dysphoria or Job Dissatisfaction*, the study’s dependent variable, is highly right skewed, indicating that the preponderance of the respondents are not highly dysphoric; to a considerable extent they were satisfied with their jobs. Interestingly, emotional effects of coping were essentially normally distributed in the sample, while avoidance effects of coping were biased toward the high end of the scale (compare Figures 13 and 15). A spike at the high end of avoidance contributed to this effect. Hardiness was relatively normally distributed in the sample. *Table 3* below provides means, medians, and standard deviations of these metric variables.

**Table 3.**

*Descriptive Statistics (Metric Variables)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Dysphoria State T-Score</em></td>
<td>146</td>
<td>41.25</td>
<td>37</td>
<td>7.907</td>
</tr>
<tr>
<td><em>CISS Emotion T-Score</em></td>
<td>146</td>
<td>45.75</td>
<td>45</td>
<td>8.757</td>
</tr>
<tr>
<td><em>CISS Avoidance T-Score</em></td>
<td>146</td>
<td>59.99</td>
<td>61</td>
<td>11.160</td>
</tr>
<tr>
<td><em>PVS Hardiness Total</em></td>
<td>145</td>
<td>40.08</td>
<td>41</td>
<td>6.160</td>
</tr>
</tbody>
</table>

Frequencies of all the categorical items captured in this study are detailed in *Table 4*. By design, the study captured an equal number of a combined Baby Boomers/Generation X cohort and a Millennial cohort. Within these two cohorts, males outnumbered females by
a ratio of about 3.5 to 1. Of the females, 88% had at least a junior college education\(^4\).
Compared to males, the females sampled were somewhat newer to the force: 26 of the 33
females were on the force 15 years or less; only 3 were sergeants, while the rest were
officers.

With respect to the whole sample (males and females), 64% of the sampled police
were under 40 years of age. In this San Francisco Police sample, half the sampled force
was Caucasian, 22% were Asian, 18% were Hispanic, and a little less than 10% were
African American. A little over 50% of the sample had less than 10 years of police
service; a little less than 75% had less than 15 years of service. In this research study
sample, 50.7% were married, while 35.6% identified as single, 7.5% were divorced, and
6.2% were living with a significant other. Interestingly, 80% of this sample had either
college or junior college education, either community college, under-graduate, or
graduate. Only 15% had served in the military. Few were smokers; (4.8%), but 77.4%
used alcohol (see Table 4).

\(^4\) Note, though, that the ratio of female high school to college-educated members of the force is not
very different from the same ratio for males.
Table 4

**Descriptive Statistics (All Categorical Variables)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cohort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boomer/Generation X</td>
<td>73</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Millennial</td>
<td>73</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>146</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>113</td>
<td>74.4</td>
<td>77.4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>33</td>
<td>22.6</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td></td>
<td>6</td>
<td>4.1</td>
<td>4.1</td>
</tr>
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<td>25-29</td>
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<td>31</td>
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<td>29</td>
<td>19.9</td>
<td>64.4</td>
</tr>
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<td>40-44</td>
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<td>20</td>
<td>13.7</td>
<td>78.1</td>
</tr>
<tr>
<td>45-49</td>
<td></td>
<td>13</td>
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</tr>
<tr>
<td>&gt;49</td>
<td></td>
<td>19</td>
<td>13.0</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
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<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
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<tr>
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<td>73</td>
<td>50</td>
<td>50</td>
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<td>14</td>
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<td>59.6</td>
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<td>100</td>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>Years of Service</strong></td>
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<td>8.2</td>
<td>92.5</td>
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<td>4.8</td>
<td>97.3</td>
</tr>
<tr>
<td>&gt;29</td>
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<td>4</td>
<td>2.7</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
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<td></td>
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<tr>
<td>Single</td>
<td></td>
<td>52</td>
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<td>35.6</td>
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<tr>
<td>Married</td>
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<td>74</td>
<td>50.7</td>
<td>86.3</td>
</tr>
<tr>
<td>Divorced</td>
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<td>11</td>
<td>7.5</td>
<td>93.8</td>
</tr>
<tr>
<td>Living with Significant Other</td>
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<td>9</td>
<td>6.2</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>146</td>
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</tr>
<tr>
<td><strong>Education Level</strong></td>
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<td>5.5</td>
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<tr>
<td>Doctorate</td>
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<td>6</td>
<td>4.1</td>
<td>100</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Police Rank</strong></td>
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<td></td>
</tr>
<tr>
<td>Officer</td>
<td></td>
<td>132</td>
<td>90.4</td>
<td>90.4</td>
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<tr>
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<td>9</td>
<td>6.2</td>
<td>96.6</td>
</tr>
<tr>
<td>Lieutenant</td>
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<td>3</td>
<td>2.1</td>
<td>98.6</td>
</tr>
<tr>
<td>Captain</td>
<td></td>
<td>2</td>
<td>1.4</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>146</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Military Service</strong></td>
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<td></td>
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<td>No</td>
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<td><strong>Total</strong></td>
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</tr>
<tr>
<td><strong>GrBeret/SEAL/Ranger</strong></td>
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<td><strong>Regular Exercise</strong></td>
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<td>97.9</td>
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<tr>
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<td></td>
<td>3</td>
<td>2.1</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
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<td><strong>Smoker</strong></td>
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<td></td>
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</tr>
<tr>
<td>No</td>
<td></td>
<td>139</td>
<td>95.2</td>
<td>100</td>
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</table>
Comparative Study of Cognitive Hardiness in Three Generations of Police Officers

<table>
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<th>Alcohol Use</th>
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</tr>
</thead>
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<tr>
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<td>113</td>
<td>77.4</td>
<td>77.4</td>
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<td>No</td>
<td>33</td>
<td>22.6</td>
<td>100</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Prescription Meds</th>
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<th>146</th>
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<td>18</td>
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<td>12.3</td>
</tr>
<tr>
<td>No</td>
<td>128</td>
<td>87.7</td>
<td>100</td>
</tr>
</tbody>
</table>

**The Inferential Statistical Model**

As the Methodology chapter explains, the study’s seven hypotheses were operationalized as a moderated, doubly mediated multiple regression. In order to capture all the relevant information about the hypothesized relationships, a hybrid approach was taken. Specifically, a series of regressions were to be performed first (see the Regression Results below). Then, the McMed SPSS macro would be run to obtain one of the needed significances related to each mediation. Finally, the Hayes’ Process macro would be run to see what levels of the anticipated moderation significantly affected each mediation. Of course, some of these steps would only make sense if the anticipated direct effects, mediations, and moderation were found. The details of what steps (and parts of these steps) needed to be performed, given the results, are detailed below at the appropriate points in the hybrid process.

**Statistical Issue Related to the Regressions**

As noted earlier, some of the variables used in the regressions exhibited distinct non-normality. A frequent means of correcting for non-normality is to transform an offending variable using one of many mathematical transformations such as sine, logarithm, or exponential transformations (Field, 2005). These transformations are often successful at ameliorating at least some of the problems, though much trial and error may be necessary. However, these transformations change the meaning of the coefficients in
the regression, making comparison of multiple variables difficult if not impossible (Hayes, 2013).

Fortuitously, the challenge of this study’s multiple variables and regressions made bootstrapping a practical way to handle non-normality. Bootstrapping exploits the “regression to the mean” effect that occurs when repeated samples are taken from a population. Though the population may be quite non-normal, the resultant mean of each sample’s means will be normal (Wu, 1986). In the case of bootstrapping, repeated subsamples of the available data are taken and regressed, using the mean values of the iterations in the results. One thousand iterations is a commonly used number of iterations (Wu, 1986), and was used in this study. For each regression, key un-bootstrapped and bootstrapped values are provided.

**Statistical Model and Related Equations**

The operational model diagram and the equations in the process are repeated here.

![Operational Model Diagram]

*Figure 19. Operational (statistical) model.*

The equations and their positions in each of the four steps, are repeated below for convenience.
Step 1: Total effect test.

\[ D = b_0 + b_1 C_1 + \ldots + b_n C_n \]  
\[ D = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X \]

where: \( D \) is the study's dependent variable, Job Dissatisfaction, 
\( X \) is the study's independent variable, Generational Class, 
\( C_i \) is a control variable and 
\( b_0 \) is a constant.

Step 2: Testing the moderation and part of the mediations.

\[ M_1 = b_0 + b_1 C_1 + \ldots + b_n C_n \]
\[ M_1 = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X \]
\[ M_1 = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X + b_{n+2} W \]
\[ M_1 = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X + b_{n+2} W + b_{n+3} WX \]
\[ M_2 = b_0 + b_1 C_1 + \ldots + b_n C_n \]
\[ M_2 = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X \]
\[ M_2 = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X + b_{n+2} W \]
\[ M_2 = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} X + b_{n+2} W + b_{n+3} WX \]

where: \( M_1 \) is the potential mediator, Emotional Effects of Coping, 
\( M_2 \) is the potential mediator, Avoidance Effects of Coping, 
\( X \) is the study's independent variable, Generational Class, 
\( W \) is the potential moderator, Cognitive Hardiness, 
\( WX \) is the interaction of the potential moderator and the independent variable, 
\( C_i \) is a control variable and 
\( b_0 \) is a constant.

Step 3: Completing the Indirect Path.

\[ D = b_0 + b_1 C_1 + \ldots + b_n C_n \]
\[ D = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} M_1 + b_{n+2} M_2 \]

where: \( D \) is the study’s dependent variable, Job Dissatisfaction, 
\( M_1 \) is the potential mediator, Emotional Effects of Coping, 
\( M_2 \) is the potential mediator, Avoidance Effects of Coping, 
\( C_i \) is a control variable and 
\( b_0 \) is a constant.

Step 4: Completing the regression aspects of mediation testing.

\[ D = b_0 + b_1 C_1 + \ldots + b_n C_n + b_{n+1} M_1 + b_{n+2} M_2 + b_{n+3} X \]

where: \( D \) is the study’s dependent variable, Job Dissatisfaction,
$M_1$ is the potential mediator, Emotional Effects of Coping,
$M_2$ is the potential mediator, Avoidance Effects of Coping,
$X$ is the study’s independent variable, Generational Class,
$C_i$ is a control variable and
$b_0$ is a constant.

**Regressions and Related Results**

The following subsections provide the results of all the hierarchical regressions for this study, and for the executed SPSS macros. Where statistical or results-oriented issues were encountered, the modifications/substitutions that were made are explained in this section, and their results are documented.

**Pearson Correlations of Metric and Dichotomous Variables**

The Pearson correlations of all the study’s variables are provided in Table 5 below. Note that these variables include all the data items captured — and used — as part of this study (not all the demographic variables were intended to be used in the study’s regressions). The Methods chapter indicates that three of the demographic items (Gender, Age, and Years of Service) were designed to be used as controls in the regressions. However, as Table 5 shows, there is a high correlation between Age and Years of Service (Pearson value of 0.82). This multicollinearity is a problem for the study’s regressions: In effect, the regressions cannot provide accurate coefficients (and therefore significances) for these two variables. The typical solution to such a problem is either to combine the variables when there is a natural overall construct or to eliminate one of them. Since there is no natural overarching construct, Years of Service was eliminated from the regressions. Instead, Education Level was substituted as one of the controls.
The remaining Pearson bivariate correlations were examined for possible multicollinearity problems, but none were high enough to suggest further problems. Nevertheless, in all the regressions variance inflation factors (VIFs) were produced to check for multicollinearity issues. These VIFs are reported as part of the regression outputs.

**Table 5:**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>15</th>
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<tbody>
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<td><strong>Cohort ID</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>-0.117</td>
<td>-0.158</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>-0.310</td>
<td>-0.157</td>
<td>-0.132</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<tr>
<td><strong>Marital Stat.</strong></td>
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<td>0.176</td>
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<tr>
<td><strong>Yrs. Service</strong></td>
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<td>0.223</td>
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<tr>
<td><strong>Police Rank</strong></td>
<td>-0.390</td>
<td>-0.058</td>
<td>0.328</td>
<td>-0.046</td>
<td>0.120</td>
<td>0.411</td>
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<td></td>
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</tr>
<tr>
<td><strong>Education</strong></td>
<td>0.016</td>
<td>0.055</td>
<td>-0.034</td>
<td>-0.032</td>
<td>0.060</td>
<td>-0.052</td>
<td>0.309</td>
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<td><strong>Military Svc.</strong></td>
<td>0.191</td>
<td>0.181</td>
<td>-0.268</td>
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<td>0.088</td>
<td>-0.110</td>
<td>0.083</td>
<td>0.117</td>
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</tr>
<tr>
<td><strong>SEAL, etc.</strong></td>
<td>0.113</td>
<td>0.102</td>
<td>-0.163</td>
<td>0.065</td>
<td>0.006</td>
<td>-0.153</td>
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<td><strong>Exercise</strong></td>
<td>-0.048</td>
<td>-0.078</td>
<td>0.057</td>
<td>0.240</td>
<td>-0.005</td>
<td>0.030</td>
<td>-0.042</td>
<td>-0.005</td>
<td>-0.209</td>
<td>0.027</td>
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<td><strong>Smoker</strong></td>
<td>0.032</td>
<td>0.121</td>
<td>-0.076</td>
<td>-0.071</td>
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<td>-0.008</td>
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<td>0.142</td>
<td>0.174</td>
<td>0.134</td>
<td>0.033</td>
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<tr>
<td><strong>Alcohol Use</strong></td>
<td>-0.016</td>
<td>0.060</td>
<td>0.070</td>
<td>0.077</td>
<td>-0.358</td>
<td>0.162</td>
<td>-0.091</td>
<td>0.065</td>
<td>-0.047</td>
<td>-1.68^</td>
<td>0.037</td>
<td>0.121</td>
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<td><strong>Rx Meds</strong></td>
<td>-0.208</td>
<td>0.003</td>
<td>-0.303</td>
<td>-0.009</td>
<td>-0.069</td>
<td>-0.330</td>
<td>0.025</td>
<td>0.061</td>
<td>0.075</td>
<td>0.044</td>
<td>-0.003</td>
<td>0.013</td>
<td>0.003</td>
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<td><strong>Emotion</strong></td>
<td>-0.033</td>
<td>-0.053</td>
<td>-0.011</td>
<td>-0.004</td>
<td>-0.065</td>
<td>-0.050</td>
<td>-0.008</td>
<td>-0.066</td>
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<td>-0.018</td>
<td>0.005</td>
<td>-0.038</td>
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<tr>
<td><strong>Avoidance</strong></td>
<td>0.105</td>
<td>-0.074</td>
<td>-0.117</td>
<td>0.097</td>
<td>0.097</td>
<td>-0.109</td>
<td>-0.003</td>
<td>0.006</td>
<td>0.012</td>
<td>-0.044</td>
<td>0.022</td>
<td>0.055</td>
<td>0.117</td>
<td>-0.045</td>
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<td><strong>Hardiness</strong></td>
<td>0.023</td>
<td>-0.045</td>
<td>-0.024</td>
<td>0.017</td>
<td>0.131</td>
<td>-0.006</td>
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<td>-0.002</td>
<td>0.061</td>
<td>0.068</td>
<td>0.058</td>
<td>-0.54^</td>
<td>0.020</td>
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</tbody>
</table>

**Inferential Statistical Results: Step 1**

The hierarchical regression for Step 1 tests for a significant relationship between the study’s independent variable, Generational Class (Cohort ID in the regression tables) and the dependent variable, Workplace Dysphoria, over and above any effect from the study’s controls. The prime reason for this initial test was to obtain the significance of the total mediation effect: the significance of the coefficient of Cohort.
Model 1 of Step 1 is a regression using just the control variables. As Table 6 shows, there is no overall significance in Model 1 (p=0.6). Moreover, Table 7 shows that none of the controls (Age, Gender, and Education Level) are significant (p=0.73, p=0.27, and p=0.11 respectively in all three cases).

Model 2 adds the independent variable Cohort ID to the hierarchical regression. Tables 6 and 7 show that there is no omnibus significance (significance of the change in $R^2$), nor any coefficient significance of Cohort ID ($p=0.44$ and $p=0.38$ respectively in both cases). Hence, Cohort ID does not directly affect Workplace Dysphoria, and any total mediation effect found by later steps in the process is merely that of any found indirect mediation. (Conclusions related to any mediation are reported later since later steps in the hierarchical regression process contain additionally relevant results.)

Table 6
Omnibus Results, Step 1

<table>
<thead>
<tr>
<th></th>
<th>Adj. $R^2$</th>
<th>Std. Error</th>
<th>$\Delta F$</th>
<th>df</th>
<th>$\Delta R^2$</th>
<th>Sig. $\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>-0.008</td>
<td>7.938</td>
<td>0.625</td>
<td>3/142</td>
<td>0.013</td>
<td>0.600</td>
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<tr>
<td>Model 2</td>
<td>-0.011</td>
<td>7.949</td>
<td>0.591</td>
<td>1/141</td>
<td>0.004</td>
<td>0.443</td>
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</tbody>
</table>

*a Dependent variable: Dysphoria*
Table 7

**Coefficient-Related Statistics, Step 1**

<table>
<thead>
<tr>
<th>Term</th>
<th>B</th>
<th>Beta</th>
<th>Std. Err. Bootstrap</th>
<th>t</th>
<th>Signif.</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
<th>Partial Corr.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (constant)</td>
<td>37.522</td>
<td>2.625</td>
<td>11.213</td>
<td>11.213</td>
<td>0.001</td>
<td>32.010</td>
<td>42.554</td>
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<tr>
<td>Age</td>
<td>0.135</td>
<td>0.030</td>
<td>0.376</td>
<td>0.376</td>
<td>0.732</td>
<td>-0.757</td>
<td>1.864</td>
<td>0.029</td>
<td>1.022</td>
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<tr>
<td>Gender</td>
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<td>0.110</td>
<td>1.847</td>
<td>1.309</td>
<td>0.269</td>
<td>-1.555</td>
<td>5.724</td>
<td>0.109</td>
<td>1.022</td>
</tr>
<tr>
<td>Education Level</td>
<td>0.055</td>
<td>-0.052</td>
<td>0.345</td>
<td>-1.924</td>
<td>0.111</td>
<td>-1.943</td>
<td>1.727</td>
<td>-0.053</td>
<td>1.004</td>
</tr>
</tbody>
</table>

Model 2 (constant)

<table>
<thead>
<tr>
<th>Term</th>
<th>B</th>
<th>Beta</th>
<th>Std. Err. Bootstrap</th>
<th>t</th>
<th>Signif.</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
<th>Partial Corr.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>4.121</td>
<td>8.410</td>
<td>0.832</td>
<td>0.832</td>
<td>0.596</td>
<td>22.582</td>
<td>43.861</td>
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</tr>
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<td>Gender</td>
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<td>-0.117</td>
<td>0.028</td>
<td>-3.633</td>
<td>0.001</td>
<td>-0.646</td>
<td>1.707</td>
<td>-0.116</td>
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<tr>
<td>Education Level</td>
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<td>0.114</td>
<td>1.854</td>
<td>1.344</td>
<td>0.283</td>
<td>-1.453</td>
<td>5.794</td>
<td>0.112</td>
<td>1.024</td>
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<tr>
<td>Cohort ID</td>
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<td>0.026</td>
<td>0.720</td>
<td>0.316</td>
<td>0.751</td>
<td>-1.056</td>
<td>1.762</td>
<td>0.027</td>
<td>1.004</td>
</tr>
<tr>
<td>Cohort ID</td>
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<td>2.042</td>
<td>0.769</td>
<td>0.382</td>
<td>-2.546</td>
<td>5.784</td>
<td>0.065</td>
<td>2.955</td>
</tr>
</tbody>
</table>

---

**a** Dependent variable: Dysphoria

**b** Bootstrapping subsampled with replacement, 1,000 iterations

**Diagnostic Checks: Step 1**

Diagnostic statistics and plots were examined to ascertain whether the Step 1 regression had violated assumptions of an OLS regression. In this category are additional checks for multicollinearity, checks for normality of the regression error term, and patterns in the residuals scatterplot that suggest a variety of possible assumption violations.

An important step in the determination of any multicollinearity is the examination of the coefficient VIFs. VIFs higher than 10 suggest that multicollinearity affected the variable with such a VIF. The VIFs reported in **Table 7** show no such multicollinearity issues. **Figure 20** below shows some deviation from normality, though this is probably not extreme enough to be material in a non-bootstrapped regression. However, since the regression was bootstrapped, any problem with the error term of the non-bootstrapped regression has been eliminated. Finally, the residual plot (**Figure 21**) shows no pattern that would indicate a violation of a regression's assumptions.
**Inferential Statistical Results: Step 2a**

Step 2a's hierarchical regression tests several aspects of the operational model related to *Emotional Effects of Coping*. Model 1 in this step tests for any effect of the controls on *Emotional Effects of Coping*. Model 2 adds to the hierarchical regression *Cohort ID*: in effect, testing whether *Cohort ID* affects *Emotional Effects of Coping*. Model 3 adds *Cognitive Hardiness* to the hierarchical regression, testing whether *Cognitive Hardiness* directly affects *Emotional Effects of Coping*. Finally, model 4 adds the interaction term to the hierarchical regression, thereby testing whether *Cognitive*
Hardiness moderates the relationship between Cohort ID and Emotional Effects of Coping.

Model 1 in Tables 8 and 9 shows that none of the controls have a significant effect upon Emotional Effects of Coping. The model 1 omnibus significance and the model 1 coefficients significances are all insignificant ($p=0.003$ and $p=0.923$ respectively).

Model 2 adds the independent variable Cohort ID to the hierarchical regression. Model 2 in Table 8 shows that there is no omnibus change in significance ($p=0.38$). Model 2 in Table 9 shows that Cohort ID’s coefficient is not significant. Hence, Cohort ID does not affect Emotional Effects of Coping. Because Hypothesis 1a posits a relationship between Generational Class (i.e., Cohort ID) and Emotional Effects of Coping, the results from model 2 indicate that Hypothesis 1a cannot be upheld.

Moreover, because the Cohort ID to Emotional Effects of Coping relationship is one of the necessary conditions for any mediation of the Cohort ID to Dysphoria relationship by Emotional Effects of Coping, it can be determined at this point in the analysis that there is no such mediation. Therefore, Hypothesis H2b cannot be upheld.

Skipping to model 4, the interaction term is added to the hierarchical regression to test for the hypothesized moderation. Model 4 in Table 8 below shows that there is omnibus significance for the model. Table 9 shows that this omnibus significance resulted from coefficient significance for the interaction term, Cognitive Hardiness and Cohort$^3$. Though the interaction term is significant, Cohort ID in model 2 is
insignificant, indicating that there is no significant relationship between Cohort ID and Emotional Effects of Coping. Hence, if there is no such relationship, it cannot be moderated. Therefore, Hypothesis 3a cannot be upheld.

To finish the analysis of Step 2, model 3 needs to be assessed. Model 3 adds Cognitive Hardiness to the hierarchical regression. This model can be thought of as a “fallback” step to check for a direct effect of Cognitive Hardiness upon the Emotional Effects of Coping if no interaction was found in model 4. As the omnibus results show in Table 8, model 3 is significant, and exhibits a sizeable effect (adjusted $R^2$ shows that Cognitive Hardiness explains 30% of what affects Emotional Effects of Coping). Model 3 in Table 9 shows that Cognitive Hardiness is significant ($p=0.001$). Hence, Cognitive Hardiness directly affects the Emotional Effects of Coping rather than moderating the relationship between Cohort ID and the Emotional Effects of Coping. Since such a direct relationship was not predicted in this study, based on implications in the literature, it is not proper for this study to conclude that Cognitive Hardiness directly affects Emotional Effects of Coping (statistical significance alone is not sufficient to infer causality). However, now that this relationship has appeared in this study, it suggests that further research should take this possible effect into consideration.

---

Note that the significances of Cohort and Cognitive Hardiness in model 4 do not indicate that these variables directly affect Emotional Effects of Coping. When the interaction term is present in the regression, these terms are showing conditional effects: the value and significance of one term when the other term has a value of zero (Hayes, 2013; Jaccard & Turrisi, 2003).
Table 8

Omnibus Results, Step 2a

<table>
<thead>
<tr>
<th></th>
<th>Adj. $R^2$</th>
<th>Std. Error</th>
<th>$\Delta F$</th>
<th>df</th>
<th>$\Delta R^2$</th>
<th>Sig. $\Delta R^2$</th>
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</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>-0.018</td>
<td>8.680</td>
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<td>3/141</td>
<td>0.003</td>
<td>0.923</td>
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<tr>
<td>Model 2</td>
<td>-0.019</td>
<td>8.686</td>
<td>0.786</td>
<td>1/140</td>
<td>0.006</td>
<td>0.377</td>
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<tr>
<td>Model 3</td>
<td>0.299</td>
<td>7.201</td>
<td>64.703</td>
<td>1/139</td>
<td>0.315</td>
<td>0.000</td>
</tr>
<tr>
<td>Model 4</td>
<td>0.322</td>
<td>7.085</td>
<td>5.585</td>
<td>1/138</td>
<td>0.026</td>
<td>0.020</td>
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</tbody>
</table>

$^a$ Dependent variable: Emotional Effects of Coping

Table 9

Coefficient-Related Statistics, Step 2a

<table>
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<tr>
<th>Term</th>
<th>B</th>
<th>Beta</th>
<th>Bootstrap $^b$</th>
<th>Std. Err.</th>
<th>t</th>
<th>Signif.</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
<th>Partial Corr.</th>
<th>VIF</th>
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<td>Age</td>
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<td>0.419</td>
<td>0.199</td>
<td>0.851</td>
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<td>Gender</td>
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<td>1.789</td>
<td>-0.849</td>
<td>0.522</td>
<td>0.655</td>
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<tr>
<td>Model 2 (constant)</td>
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<td>7.413</td>
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<td>0.500</td>
<td>1.814</td>
<td>0.638</td>
<td>-0.058</td>
<td>1.023</td>
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</tr>
<tr>
<td>Education Level</td>
<td>-0.165</td>
<td>-0.017</td>
<td>0.778</td>
<td>-0.201</td>
<td>0.841</td>
<td>1.547</td>
<td>1.405</td>
<td>-0.017</td>
<td>1.005</td>
<td></td>
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<tr>
<td>Cohort ID</td>
<td>-2.196</td>
<td>-0.128</td>
<td>2.445</td>
<td>-0.887</td>
<td>0.372</td>
<td>6.526</td>
<td>2.687</td>
<td>-0.075</td>
<td>2.945</td>
<td></td>
</tr>
<tr>
<td>Model 3 (constant)</td>
<td>84.128</td>
<td>6.966</td>
<td>11.888</td>
<td>0.001</td>
<td>70.332</td>
<td>92.167</td>
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<tr>
<td>Age</td>
<td>-0.730</td>
<td>-0.147</td>
<td>0.545</td>
<td>-1.217</td>
<td>0.193</td>
<td>4.756</td>
<td>0.975</td>
<td>-0.103</td>
<td>2.934</td>
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<tr>
<td>Gender</td>
<td>-1.909</td>
<td>-0.093</td>
<td>1.448</td>
<td>-1.321</td>
<td>0.166</td>
<td>1.774</td>
<td>0.327</td>
<td>-0.111</td>
<td>1.027</td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
<td>0.686</td>
<td>0.091</td>
<td>0.635</td>
<td>1.279</td>
<td>0.196</td>
<td>0.452</td>
<td>2.191</td>
<td>0.108</td>
<td>1.042</td>
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</tr>
<tr>
<td>Cohort ID</td>
<td>-2.315</td>
<td>-0.135</td>
<td>2.000</td>
<td>-1.128</td>
<td>0.263</td>
<td>6.241</td>
<td>1.558</td>
<td>-0.095</td>
<td>2.945</td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>-0.799</td>
<td>-0.372</td>
<td>0.095</td>
<td>-0.844</td>
<td>0.001</td>
<td>0.999</td>
<td>0.613</td>
<td>-0.564</td>
<td>1.041</td>
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<tr>
<td>Hardness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 4 (constant)</td>
<td>110.601</td>
<td>11.787</td>
<td>8.382</td>
<td>0.001</td>
<td>78.987</td>
<td>102.302</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.563</td>
<td>-0.113</td>
<td>0.546</td>
<td>-0.948</td>
<td>0.314</td>
<td>4.779</td>
<td>1.036</td>
<td>-0.080</td>
<td>3.026</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-2.014</td>
<td>-0.098</td>
<td>1.454</td>
<td>-1.415</td>
<td>0.169</td>
<td>1.578</td>
<td>0.529</td>
<td>-0.120</td>
<td>1.028</td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
<td>1.082</td>
<td>0.111</td>
<td>0.691</td>
<td>1.576</td>
<td>0.110</td>
<td>-0.254</td>
<td>2.482</td>
<td>0.133</td>
<td>1.057</td>
<td></td>
</tr>
<tr>
<td>Cohort ID</td>
<td>-20.291</td>
<td>-1.183</td>
<td>7.347</td>
<td>-2.578</td>
<td>0.009</td>
<td>36.015</td>
<td>-5.260</td>
<td>-0.214</td>
<td>44.723</td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>-1.505</td>
<td>-1.076</td>
<td>0.264</td>
<td>-4.791</td>
<td>0.001</td>
<td>2.177</td>
<td>1.008</td>
<td>-0.378</td>
<td>10.742</td>
<td></td>
</tr>
<tr>
<td>Hardness</td>
<td>0.360</td>
<td>1.208</td>
<td>0.183</td>
<td>2.863</td>
<td>0.014</td>
<td>0.105</td>
<td>0.851</td>
<td>0.197</td>
<td>55.503</td>
<td></td>
</tr>
</tbody>
</table>

$^b$ Bootstrapping subsampled with replacement, 1,000 iterations

Note that the significances of Cohort and Cognitive Hardness in Model 4 do not indicate that these variables directly affect Emotional Effects of Coping. When the interaction term is present in the regression, these terms are showing conditional effects: the value and significance of one term when the other term has a value of zero (Hayes, 2013; Jaccard & Turrisi, 2003).

$^a$ Dependent variable: Emotional Effects of Coping

$^b$ Bootstrapping subsampled with replacement, 1,000 iterations

Diagnostic Checks: Step 2a

For Step 2a, as with the previous step, VIFs were examined to determine whether multicollinearity was present. Models 1 through 4's VIFs showed no such problems.
The high [>10] VIFs for the independent variable, the potential moderator, and the interaction term in model 4 is a normal condition for a model with an interaction term and does not represent multicollinearity issues. One expects the interaction term and its individual components to be highly correlated.

*Figure 22* shows no deviation from normality for the regression's residuals. And the residual plot (*Figure 23*) shows no pattern that would indicate a violation of a regression's assumptions.

*Figure 22:* Histogram of Step 2a residuals.

*Figure 23:* Step 2a residuals plot
Inferential Statistical Results: Step 2b

Step 2b mirrors the regression sequence used in Step 2a. It differs from Step 2a only in that Avoidance Effects of Coping is the dependent variable (see equations 7 through 10 above). Therefore, Step 2b tests the same factors as Step 2a does, but against Avoidance as opposed to Emotion (See Figure 19 for a graphic depiction of this parallelism.). In particular, for Avoidance Effects of Coping, this step tests whether this variable is a function of Cohort ID, whether this relationship is moderated by Cognitive Hardiness (or, alternatively, whether Cognitive Hardiness directly affects Avoidance Effects of Coping).

Table 10
Omnibus Results, Step 2b

<table>
<thead>
<tr>
<th>Model</th>
<th>Adj. R²</th>
<th>Std. Error</th>
<th>ΔF</th>
<th>df</th>
<th>ΔR²</th>
<th>Sig. ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>0.006</td>
<td>11.097</td>
<td>1.266</td>
<td>3/141</td>
<td>0.026</td>
<td>0.288</td>
</tr>
<tr>
<td>Model 2</td>
<td>-0.002</td>
<td>11.136</td>
<td>0.003</td>
<td>1/140</td>
<td>0.000</td>
<td>0.958</td>
</tr>
<tr>
<td>Model 3</td>
<td>-0.009</td>
<td>11.176</td>
<td>0.014</td>
<td>1/139</td>
<td>0.000</td>
<td>0.904</td>
</tr>
<tr>
<td>Model 4</td>
<td>-0.016</td>
<td>11.215</td>
<td>0.026</td>
<td>1/138</td>
<td>0.000</td>
<td>0.871</td>
</tr>
</tbody>
</table>

* Dependent variable: Avoidance Effects of Coping

Table 10 above shows that none of the four models exhibited significance (p=0.29, p=0.96, and p=0.87 respectively) at the omnibus level. Table 11 below depicts the results at the individual coefficient level. Model 1 shows that none of the controls significantly predicted Avoidance (p=011, p=0.23, and p=0.96 respectively), paralleling the results for Emotion in Step 2a. Model 2 shows that Cohort ID was not a predictor of Avoidance (p=0.96), again paralleling results for Emotion. Models 3 and 4 tested whether Cognitive Hardiness was directly related to Avoidance Effects of Coping, or whether it could have been a moderator of any Cohort ID to Avoidance relationship. Model 3 shows that no significant direct effect exists (p=0.90). Model 4 shows that no moderation would have existed if the Cohort ID to Avoidance relationship had been
significant \((p=0.87)\). Hence, at this point in the analysis, it is evident that *Hypothesis 1b cannot be upheld* (no significant relationship between *Cohort ID* and *Avoidance Effects of Coping*). Moreover, since the *Cohort ID* to *Avoidance* relationship is one part of the hypothesized mediation, *Cohort \rightarrow Emotional Effects \rightarrow Dysphoria*, it can be ascertained at this point that *Hypothesis 2c cannot be upheld*. Finally, *Hypothesis 3b was not upheld* because there is no moderation of any *Cohort ID* to *Avoidance* relationship.

**Table 11**

*Coefficient-Related Statistics, Step 2b*  

<table>
<thead>
<tr>
<th>Term</th>
<th>B</th>
<th>Beta</th>
<th>Bootstrapped</th>
<th>Std. Err.</th>
<th>Std. Beta</th>
<th>Bootstrapped</th>
<th>Signif. Lower 95% CI</th>
<th>Signif. Upper 95% CI</th>
<th>Partial Corr.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (constant)</td>
<td>66.406</td>
<td>5.029</td>
<td>14.175</td>
<td>0.001</td>
<td>55.844</td>
<td>76.133</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.947</td>
<td>-0.147</td>
<td>0.591</td>
<td>-1.755</td>
<td>0.105</td>
<td>-2.062</td>
<td>0.279</td>
<td>0.146</td>
<td>1.019</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-2.370</td>
<td>-0.090</td>
<td>1.979</td>
<td>-1.067</td>
<td>0.233</td>
<td>-8.472</td>
<td>1.415</td>
<td>0.090</td>
<td>1.021</td>
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</tr>
<tr>
<td>Education Level</td>
<td>0.053</td>
<td>0.004</td>
<td>1.021</td>
<td>0.050</td>
<td>0.962</td>
<td>-2.114</td>
<td>2.083</td>
<td>0.004</td>
<td>1.004</td>
<td></td>
</tr>
<tr>
<td>Model 2 (constant)</td>
<td>65.889</td>
<td>9.565</td>
<td>7.148</td>
<td>0.001</td>
<td>48.253</td>
<td>85.722</td>
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<tr>
<td>Age</td>
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<td>-0.141</td>
<td>0.597</td>
<td>-0.890</td>
<td>0.359</td>
<td>-2.812</td>
<td>1.061</td>
<td>0.83</td>
<td>2.982</td>
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</tr>
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<td>Gender</td>
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<td>-0.088</td>
<td>1.991</td>
<td>-1.086</td>
<td>0.243</td>
<td>-5.610</td>
<td>1.452</td>
<td>0.089</td>
<td>1.023</td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
<td>0.054</td>
<td>0.004</td>
<td>1.033</td>
<td>0.051</td>
<td>0.957</td>
<td>-2.102</td>
<td>2.140</td>
<td>0.004</td>
<td>1.005</td>
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<tr>
<td>Cohort ID</td>
<td>0.167</td>
<td>0.008</td>
<td>3.080</td>
<td>0.052</td>
<td>0.962</td>
<td>-6.144</td>
<td>6.227</td>
<td>0.004</td>
<td>2.945</td>
<td></td>
</tr>
<tr>
<td>Model 3 (constant)</td>
<td>65.275</td>
<td>10.983</td>
<td>5.933</td>
<td>0.001</td>
<td>43.936</td>
<td>87.253</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.905</td>
<td>-0.141</td>
<td>0.581</td>
<td>-0.973</td>
<td>0.362</td>
<td>-2.827</td>
<td>1.047</td>
<td>0.82</td>
<td>2.984</td>
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<tr>
<td>Gender</td>
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<td>-1.047</td>
<td>0.245</td>
<td>-6.554</td>
<td>1.472</td>
<td>0.088</td>
<td>1.027</td>
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</tr>
<tr>
<td>Education Level</td>
<td>0.029</td>
<td>0.002</td>
<td>1.043</td>
<td>0.027</td>
<td>0.972</td>
<td>-2.114</td>
<td>2.172</td>
<td>0.002</td>
<td>1.042</td>
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<tr>
<td>Cohort ID</td>
<td>0.169</td>
<td>0.008</td>
<td>3.093</td>
<td>0.055</td>
<td>0.966</td>
<td>-5.054</td>
<td>6.222</td>
<td>0.005</td>
<td>2.945</td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>0.019</td>
<td>0.010</td>
<td>0.150</td>
<td>0.120</td>
<td>0.904</td>
<td>-0.277</td>
<td>0.304</td>
<td>0.010</td>
<td>1.041</td>
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<tr>
<td>Hardiness</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 4 (constant)</td>
<td>62.389</td>
<td>20.139</td>
<td>2.987</td>
<td>0.004</td>
<td>19.333</td>
<td>100.602</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>-0.143</td>
<td>0.989</td>
<td>-0.982</td>
<td>0.355</td>
<td>-2.823</td>
<td>1.013</td>
<td>0.083</td>
<td>3.026</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-2.337</td>
<td>-0.088</td>
<td>2.017</td>
<td>-1.038</td>
<td>0.247</td>
<td>-6.617</td>
<td>1.459</td>
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<td>1.028</td>
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<tr>
<td>Education Level</td>
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<td>0.001</td>
<td>1.054</td>
<td>0.067</td>
<td>0.964</td>
<td>-2.139</td>
<td>2.243</td>
<td>0.001</td>
<td>1.057</td>
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</tr>
<tr>
<td>Cohort ID</td>
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<td>0.066</td>
<td>12.990</td>
<td>0.171</td>
<td>0.870</td>
<td>-20.904</td>
<td>23.177</td>
<td>0.015</td>
<td>44.723</td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>0.095</td>
<td>0.053</td>
<td>0.482</td>
<td>0.192</td>
<td>0.838</td>
<td>-0.804</td>
<td>1.103</td>
<td>0.016</td>
<td>10.742</td>
<td></td>
</tr>
<tr>
<td>Hardiness</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort by Hardiness</td>
<td>-0.050</td>
<td>-0.102</td>
<td>0.321</td>
<td>-0.163</td>
<td>0.866</td>
<td>-0.738</td>
<td>0.534</td>
<td>-0.014</td>
<td>55.503</td>
<td></td>
</tr>
</tbody>
</table>

*a* Dependent variable: *Avoidance Effects of Coping*

*b* Bootstrapping subsampled with replacement, 1,000 iterations

**Diagnostic Checks: Step 2b**

As in previous steps, VIFs were checked for multicollinearity, the error term plot was checked for approximate normality, and the scatterplot of the predicted values vs. the
studentized residuals was checked for patterns that might indicate nonlinearity of any of the relationships predicted (heteroscedasticity). VIFs did not indicate multicollinearity, and the histogram and scatterplot showed no abnormal conditions. See Figures 24 and 25 below.

![Histogram of Step 2b residuals](image)

**Figure 24.** Histogram of Step 2b residuals.

![Step 2b residuals plot](image)

**Figure 25.** Step 2b residuals plot.

**Inferential Statistical Results: Steps 3 and 4**

Step 3 tests the effects of the emotional and avoidance aspects of coping upon the study’s dependent variable, *Workplace Dysphoria*. Step 4 adds to the hierarchical regression of
Step 3 the study’s independent variable, Cohort ID. In addition to testing the effects of coping on Dysphoria, Step 3 completes paths necessary to test the study’s hypothesized mediations. 

**Table 12**

Omnibus Results, Step 3 & Step 4

<table>
<thead>
<tr>
<th></th>
<th>Adj. R²</th>
<th>Std. Error</th>
<th>ΔF</th>
<th>df</th>
<th>ΔR²</th>
<th>Sig. ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 3: Model 1</td>
<td>-0.008</td>
<td>7.938</td>
<td>0.625</td>
<td>3/142</td>
<td>0.013</td>
<td>0.690</td>
</tr>
<tr>
<td>Step 3: Model 2</td>
<td>0.158</td>
<td>7.255</td>
<td>14.998</td>
<td>2/140</td>
<td>0.174</td>
<td>0.000</td>
</tr>
<tr>
<td>Step 4: Model 1</td>
<td>0.162</td>
<td>7.238</td>
<td>1.648</td>
<td>1/139</td>
<td>0.010</td>
<td>0.201</td>
</tr>
</tbody>
</table>

*a Dependent variable: Dysphoria

At the omnibus level (Table 12) Step 3, model 1 shows no significant effect from any of the controls. This was confirmed at the coefficient level in Table 13.

Step 3, model 2 shows significance at the omnibus level in Table 12 (p<.001). In Table 13 this effect was found to be a function of both Emotional Effects of Coping (p=0.002) and Avoidance Effects of Coping (p=0.04). Effect sizes were moderate (adjusted R² of 0.16, indicating that model 2 explained 16% of what affects Workplace Dysphoria). At the coefficient level, Emotional Effects of Coping exhibited a partial correlation coefficient of 0.42, a moderate effect size, and Avoidance Effects of Coping had a partial correlation of 0.15, a small to moderate effect size. The ratio of the betas of these coping effects showed that emotional aspects had approximately three times the effect upon Dysphoria as did avoidance aspects. Emotional Effects of Coping had a positive effect upon Dysphoria, the hypothesized direction, but Avoidance Effects of Coping had a negative (inverse) effect upon Dysphoria, as opposed to the hypothesized

---

3Though model 2 of Steps 2a and 2b, reported earlier, showed that other paths necessary for these mediations failed to obtain significance, this step was completed for informational comprehensiveness.
positive effect. Regardless of the significances and directions of the effects in Step 3, and as noted earlier, Hypotheses 2b and 2c were not upheld because other portions of the mediations were insignificant.

Table 13
Coefficient-Related Statistics, Step 3 & Step 4

<table>
<thead>
<tr>
<th>Term</th>
<th>B</th>
<th>Beta</th>
<th>Std. Err.</th>
<th>Bootstrapped</th>
<th>95% CI</th>
<th>95% CI</th>
<th>Partial Corr.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 3:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>constant</td>
<td>37.522</td>
<td>2.825</td>
<td>11.213</td>
<td>0.001</td>
<td>32.010</td>
<td>42.954</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>2.078</td>
<td>0.110</td>
<td>1.309</td>
<td>0.269</td>
<td>-1.555</td>
<td>5.724</td>
<td>0.109</td>
<td>1.022</td>
</tr>
<tr>
<td>Gender</td>
<td>0.135</td>
<td>0.030</td>
<td>0.353</td>
<td>0.732</td>
<td>-0.557</td>
<td>0.864</td>
<td>0.030</td>
<td>1.020</td>
</tr>
<tr>
<td>Education Level</td>
<td>0.227</td>
<td>0.025</td>
<td>0.717</td>
<td>0.754</td>
<td>-1.043</td>
<td>1.727</td>
<td>0.025</td>
<td>1.004</td>
</tr>
</tbody>
</table>

Step 3: (constant) | 25.555 | 6.042 | 4.630     | 0.001        | 13.802     | 38.676     |               |     |

Model 2: Age | 2.267 | 0.120 | 1.554     | 0.173        | -1.011     | 5.699      | 0.130         | 1.032 |
| Gender      | 0.091 | 0.020 | 0.275     | 0.738        | -0.581     | 0.790      | 0.022         | 1.037 |
| Education Level | 0.297 | 0.033 | 0.434     | 0.683        | -1.018     | 1.613      | 0.037         | 1.004 |
| Emotional Effects | 0.384 | 0.041 | 0.101     | 0.002        | 0.185      | 0.596      | 0.415         | 1.028 |
| Avoidance Effects | -0.098 | -0.138 | 0.048     | -1.757       | -0.019     | -0.148     | -0.148        | 1.048 |

Step 4: (constant) | 18.698 | 6.340 | 2.437     | 0.007        | 5.423      | 31.302     |               |     |

Model 1: Age | 2.365 | 0.126 | 1.623     | 0.156        | -0.865     | 5.779      | 0.136         | 1.035 |
| Gender      | 0.714 | 0.157 | 1.191     | 0.160        | -0.287     | 1.753      | 0.101         | 3.019 |
| Education Level | 0.315 | 0.035 | 0.461     | 0.661        | -1.031     | 1.661      | 0.039         | 1.005 |
| Emotional Effects | 0.391 | 0.042 | 0.103     | 0.002        | 0.182      | 0.596      | 0.422         | 1.034 |
| Avoidance Effects | -0.099 | -0.140 | 0.048     | -1.802       | 0.039      | -0.202     | -0.151        | 1.048 |
| Cohort ID   | 2.652 | 0.168 | 1.284     | 0.145        | -0.733     | 0.321      | 0.108         | 2.974 |

\[a\] Dependent variable: Dysphoria

\[b\] Bootstrapping subsampled with replacement, 1,000 iterations

Step 4 completes the hierarchical regressions in this study. It tests whether Dysphoria is a function of Cohort ID such that Millennials will exhibit greater job dissatisfaction than Baby Boomers. Step 4 in Table 12 shows no significant change in \(R^2\) over Step 3 model 2. Moreover, Table 13 shows that the coefficient Cohort ID is not significant \((p > .05)\). Thus, Hypothesis 2a cannot be upheld.

Diagnostic Checks: Steps 3 and 4

Following the plan for diagnostic checks established for the earlier regression steps, VIFs were checked for multicollinearity, the error term plot was checked for approximate normality, and the scatterplot of the predicted values vs. the studentized residuals was checked for patterns that might indicate heteroscedasticity. VIFs indicated
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no multicollinearity. The histogram in Figure 26 was normal enough not to have presented problems. However, the scatterplot showed a distinct wedge shape, a signal that heteroscedasticity existed. This nonlinearity of the relationships in the hierarchical regression is likely the effect of the distinctly non-normal distribution of Dysphoria, and to some extent that of the non-normality of the avoidance effects. Since the bootstrapping employed in this study corrected for this non-normality, the heteroscedasticity exhibited in the non-bootstrapped data should not have affected the bootstrapped results. Therefore, for this study no experimentation with nonlinear regressions was attempted.

![Histogram of Steps 3 and 4 residuals.](image1.png)

*Figure 26.* Histogram of Steps 3 and 4 residuals.

![Steps 3 and 4 residuals plot.](image2.png)

*Figure 27.* Steps 3 and 4 residuals plot.
Mediation Significance Considerations

The hybrid approach taken for this study contained not only the above-analyzed regressions, but also (a) computation of all the path significances needed to ascertain mediation, and (b) computation of conditional significances for the hypothesized moderations. The plan called for the use of Hayes’ Process macro to evaluate the conditional significances, and the McMed macro to produce one of the significance values for true mediation.

The mediations hypothesized in this study were not upheld, so the use of the McMed macro, exactly as detailed in the inferential statistical plan, was not necessary—and not performed. Though no significant moderations were found in the above-reported regressions, for completeness’ sake the Hayes’ Process macro was run to produce the conditional indirect effects statistics. These are reported in Table 14, showing results for selected values of Cognitive Hardiness. It appears that the Baby Boomer/Generation X cohort and the Millennial cohort exhibited a similar level of hardiness.

Table 14

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Cognitive Hardiness</th>
<th>Effect</th>
<th>Std. Error</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Effects</td>
<td>33.922</td>
<td>-1.139</td>
<td>0.764</td>
<td>-3.177</td>
<td>-0.061</td>
</tr>
<tr>
<td></td>
<td>40.083</td>
<td>-0.147</td>
<td>0.488</td>
<td>-1.332</td>
<td>0.572</td>
</tr>
<tr>
<td></td>
<td>46.243</td>
<td>0.905</td>
<td>0.837</td>
<td>-0.044</td>
<td>2.399</td>
</tr>
<tr>
<td>Avoidance Effects</td>
<td>33.922</td>
<td>-0.252</td>
<td>0.286</td>
<td>-1.047</td>
<td>0.115</td>
</tr>
<tr>
<td></td>
<td>40.083</td>
<td>-0.246</td>
<td>0.231</td>
<td>-0.890</td>
<td>0.047</td>
</tr>
<tr>
<td></td>
<td>46.243</td>
<td>-0.231</td>
<td>0.311</td>
<td>-1.230</td>
<td>0.159</td>
</tr>
</tbody>
</table>

Interestingly, a potential mediation that was not hypothesized did show up in the results Hardiness is associated with Dysphoria or Job Dissatisfaction and is mediated by the Emotional Effects of Coping, Figure 28 depicts this potential mediation. Though significant relationships that were not hypothesized cannot be used to declare that the un-
hypothesized relationships exist, they suggest that those relationships might exist. Future studies would need to be constructed, using a new sample, to test those relationships. To aid in such future endeavors, testing of the probable mediations was completed by examining specific significances in the above regressions (see details below), running an additional regression to obtain the total mediation significance (see below), and running the *McMed* macro to obtain the indirect effect significance. Significance from all these additional tests is needed to ascertain whether mediation exists (Hayes, 2013).

![Diagram](image)

*Figure 28.* Uncovered potential mediation.

Specifically, to have mediation, significance of the coefficients in the following paths must be ascertained: (a) *Cognitive Hardiness* on *Emotional Effects of Coping*, (b) *Emotional Effects of Coping* on *Job Dissatisfaction* (*Workplace Dysphoria*), and (c) *Cognitive Hardiness* on *Job Dissatisfaction*. From these data, the following four conditions must exist for full or partial mediation: the coefficient from (a) above must be significant, the coefficient from (b) above must be significant, the indirect effect must be significant [i.e., significance of (a)*(b)], and the total effect must be significant if there is partial mediation, determined by the coefficient from (c) above.
To obtain significance of (c), *Dysphoria* was bootstrap regressed on the study’s controls and *Cognitive Hardiness*, resulting in significance for the coefficient of *Cognitive Hardiness* \( p < .01 \). Model 3 in Step 2a shows that (a) is significant \( p < .01 \). Model 2 in Step 3 shows that (b) is significant \( p < .01 \). *McMed* was run, resulting in significance of \( (a) \times (b) \) by virtue of the fact that the 95% confidence interval did not contain zero. The data exhibited partial mediation in that *Job Dissatisfaction* was correlated with *Cognitive Hardiness* directly, and also indirectly through *Emotional Effects of Coping*. The directionality of this mediation relationship is also interesting. To wit, *Cognitive Hardiness* affects the emotional component of *Coping* inversely. The emotional component of *Coping* affects *Job Dissatisfaction* positively. And *Cognitive Hardiness* affects *Job Dissatisfaction* inversely. These direct and inverse relationships are conceptually realistic, based on the meanings of the constructs involved.

**Conclusions from the Statistical Analyses**

This study hypothesizes a set of relatively complex relationships, including both mediations and moderations. Though none of these complex relationships were upheld, several individual relationships within the hypotheses were significant. In that category is the relationship between the two coping variables and the dependent variable. *Emotional Effects of Coping* was significantly related to *Dysphoria or Job Dissatisfaction*. *Avoidance Effects of Coping* was also significantly related to *Dysphoria or job dissatisfaction* (though inversely). Additionally, *Cognitive Hardiness* was significantly related to *Emotional Effects of Coping*, though it was not the moderator it was hypothesized to be. Overall, this study uncovered potentially consequential
relationships. Also, the results of this study offer a rich source of information for future studies on the crucial subjects of peace officer job satisfaction and related constructs.

CHAPTER FIVE
DISCUSSION

A career in law enforcement entails having the capacity to be adaptive and exhibit flexibility in dealing with unpredictable situations including critical and traumatic incidents. This study focused on the police culture to differentiate coping factors for generational cohorts from the San Francisco Police Department. Cognitive hardiness can be a protective factor in preserving a law enforcement officer's overall emotional and physical wellness while minimizing the adverse effects of the job. This research study looked at three generational cohorts in relation to the role of cognitive hardiness, emotional distress, avoidance behaviors and job dysphoria. The three generational groups were divided into two cohorts and were selected based on some criteria relevant to this research study. The cohort of Baby Boomers and Gen X (Cohort 1) had a higher likelihood of similarities in the way the officers were trained, a closer time in service and a higher likelihood of more exposure to traumatic incidents in their long law enforcement careers. In addition, the sample size of the Baby Boomer generation of officers would have been too small to examine independently. Although none of the hypothesized relationships were upheld, there were some interesting findings that would be worth further study. In the first research question, “Do the coping abilities of Baby Boomer and Generation X police officers as a whole under occupational stress differ from those of Millennial police officers in terms of emotional distress and avoidance?” it was
hypothesized that the Millennial police officers’ cohort would report greater levels of emotional distress in relation to occupational stressors than officers in the Baby Boomer and Generation X cohort; this hypothesis was not upheld. Specifically, both groups endorsed a similar level of emotional distress in relation to occupational stressors.

In addition, it was hypothesized that Millennial police officers would report higher levels of avoidance as a coping factor related to organizational stressors than their counterparts in the Baby Boomer and Generation X group; this hypothesis was not upheld. Endler and Parker (1999) assert that emotion and avoidance-related behaviors have been found to be related to anxiety. Emotional effects of coping tend to predominate when people think that the stressors are something that must be endured, and to help manage the impact of negative life events.

Avoidance effects of coping consist of thoughts that serve to distract, ignore and psychologically distance the police officer from the source of stress. Avoidance coping includes social withdrawal and isolation; police officers suffering from PTSD may exhibit signs of avoidance coping and withdraw into themselves, avoiding any stimuli that could be associated with the trauma. This can be an effective strategy when an officer’s emotional resources are limited, including depleted energy reserves (Anshel, 2000).

When examining the unique aspects of law enforcement, avoidance coping can be depicted as a conscious attempt at turning away from the stressful source, cognitively or physically, as a means of distracting the police officer from the source of stress and replacing negative or objectionable thoughts with more positive resources as an effective reaction to the stressful situation (Anshel, 2000). In this study, there was not a significant
difference between generational cohorts related to avoidance coping. Both cohorts exhibit similar levels of avoidance coping in relation to organizational stressors.

The second research question stated “Does exposure to occupational and organization stressors contribute to the Millennial police officers having higher levels of job dissatisfaction than those of Generation X or Baby Boomer generation police officers as a whole?” In this question, it was hypothesized that there would be greater levels of job dissatisfaction in Millennial police officers as compared to the Generation X and Baby Boomer police officers combined; this hypothesis was also not upheld. The second hypothesized relationship looked at the emotional effects of coping related to job dysphoria. In this hypothesis, there is a suggested relationship regardless of generational cohorts between the emotional effects of coping and levels of dysphoria. The third hypothesized relationship looked at avoidance behaviors with the expectation that Millennial police officers would have higher levels of avoidance as a cohort. There was an inverse relationship between avoidance and the emotional effects of coping. This would suggest that avoidance as a coping skill might be used effectively by police officers overall regardless of generational cohort. The third and final research question stated, “Do differences in cognitive hardiness account for the generational differences in occupational stress/job dissatisfaction in police officers?” There were two hypotheses related to this question: The first hypothesis suggested that cognitive hardiness would moderate the relationship between generational class and emotional distress in police officers with the expectation that cognitive hardiness would diminish the relationship. In this particular hypothesis, there was both a direct and an indirect relationship between cognitive hardiness and job dysphoria related to the emotional effects of coping. Job
dissatisfaction was directly related to levels of cognitive hardiness and indirectly through the emotional effects of coping. The third hypothesis looked at the relationship between cognitive hardiness and avoidance behavior as a means of coping in the two generational cohorts. Avoidance effects of coping do not lead to greater job dissatisfaction in either cohort. Cognitive hardiness differences were essentially not detected between the two generational cohorts. What these research findings suggest is that regardless of generational cohorts, the emotional effects of coping lead to more dysphoria for police officers. Overall, for the Millennial generation, if they stay in the police force for a long-term career, they may have better coping skills to protect against job dissatisfaction. This could have implications for recruitment, training, and development of this newer generation of police officers.

In conclusion, this research study did not detect the differences between generations that were hypothesized. Given the inherent mistrust of persons outside of the police department, it must be considered that the responses obtained from the police officers could be influenced. It is also a possibility that data obtained for this study from police officers may have been influenced by the Obama-era/Department of Justice Collaborative Reform Initiative, which proposed 272 recommendations for changes in department policy. Future studies might want to consider further study of some of the significant findings in the sub hypotheses as well as differences between the genders as a factor that might yield some interesting results. This study may be of interest when looking at future recruitment, training, and retention strategies. It might also be a benefit to examine what was learned from the results regarding the coping skills of Millennial
police officers and applying them to Gen Z, since they will soon be coming of age and possibly a career in law enforcement.

According to theory, police officers who exhibit a strong commitment to the profession will utilize their cognitive resiliency to make their working environments more engaging and worthwhile (Maddi, 2002). Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential threats more effectively. As police officers face increasing scrutiny from the public and the media, the ability to cultivate cognitive hardiness, and improve coping skills will be important when measuring the effective performance of police officers under a range of stressful conditions.

One explanation is that the effects of demographics (i.e., generational classes) are not associated with the coping strategies of police officers, at least in this study. Carver, Scheier, and Weintraub (1989) posited that personality characteristics were the strongest predictors of well-being, and associated with coping responses among police officers.

Even though the relationship between hardiness and emotional effect of coping was significant, it was not significant in the hypothesized direction; rather, there was an inverse relationship (Figure 4). Millennial generation police officers exhibited lower levels of avoidance behaviors, which led to decreased dysphoria (or job dissatisfaction). These results suggest that Millennials demonstrated a higher level of cognitive hardiness as a coping strategy rather than distancing themselves from the source of stress (e.g. social withdrawal and isolation). McCarty et al. (2007) concluded that dysphoria (or job dissatisfaction) is associated with certain dynamics central to law enforcement. When a police officer has a positive experience at his/her workplace that experience will
determine the level of job satisfaction rather than the demographic characteristics such as age, educational attainment, and perhaps generation.

McCarty et al. (2007) posit that inherent work-related factors, such as the hazardous working environment in policing, overly rigid rules, and strained relationships within the rank and file can create high levels of dysphoria (or job dissatisfaction). When police officers experience work-related stress, adaptive avoidance coping behaviors may help these officers to move ahead to their next task. In other words, the use of the adaptive avoidance behaviors is a greater predictor of job satisfaction, rather than generational demographics. When looking at the generational classes, one consideration would be the countless numbers of individual coping characteristics which can be causative regardless of generational cohort.

Finally, Cognitive Hardiness was significantly related to Emotional Effects of Coping and dysphoria although it was not the moderator that was hypothesized. However, a potential mediation that was not hypothesized did show up in the results: Hardiness was associated indirectly, through Emotional Effects, to Dysphoria (see Figure 28). Hence, the data exhibited partial mediation in that Job Dissatisfaction was correlated with Cognitive Hardiness directly, and also indirectly through Emotional Effects of Coping. The directionality of these mediation relationships is also interesting. Therefore, Cognitive Hardiness affects the emotion component of coping inversely whereas the Emotional coping component affects Job Dissatisfaction positively. Cognitive Hardiness affects Dysphoria (or job dissatisfaction) inversely. These direct and inverse relationships are conceptually realistic, based on the meanings of the constructs involved.
The manner in which coping style and cognitive hardiness impact the stress relationship has been argued in the literature. Two models have been proposed. These are the main (direct) effect model, and the moderator or a stress buffer model (Aldwin & Revenson, 1987; Beasley, Thompson, & Davidson, 2003; Wilkinson, Walford, & Espnes, 2000). Research studies suggest the main effects model predicts that a variable has direct and uniform effects on stress, irrespective of the levels of adversity experienced. The moderator model proposes that a variable, such as effective coping, buffers an individual against the effects of negative life events or stress, in an interactive way.

Beasley et al. (2003) propose that these models may be applicable to the different types of coping, with emotion-oriented coping having negative direct effects (positively predicting distress), compared to task-oriented coping, where high levels of task-oriented coping reduce mental health dysfunction. Aldwin and Revenson (1987) propose that when buffering effects have been reported, high levels of task-oriented coping diminish the adverse effects of stress. However, other research has reported the main effects of cognitive hardiness, with high cognitive hardiness scores related to increased happiness and lowered psychological distress. It has also been noted that little has been reported concerning the potential buffering effects of cognitive hardiness on stress (Nowack, 1989; Sharpley & Yardley, 1999). Though significant relationships that were not hypothesized cannot be used to declare that the un-hypothesized relationships exist, future studies could be constructed, using a new sample, to test those relationships.
Limitations of Study

As with all studies, there are some identifiable limitations for this study of cognitive hardiness, coping skills, and job dissatisfaction between generational cohorts. These limitations include recruiting police officers to participate in the research study. While police officers depend on fellow officers to ensure their safety, given the inherent mistrust of persons outside of the police department, it must be considered that the responses obtained from the police officers could be influenced by fear of reprisals. Historically, the interaction between the police officer culture and psychology has been for assessment purposes for hiring, fitness for duty, and so forth. Consequently, officers may think that the only people capable of understanding the strain and stress of police work may be their fellow officers (Benner, 1986).

Another study limitation was the sample size. Although the sample size of both cohorts was equal (n=146), it was small (6.93%) relative to the 2108 police officers employed by the San Francisco Police Department, so there is a likelihood that a much larger sample may have yielded different results.

Finally, the data were collected from the San Francisco Police Department, the third oldest law enforcement agency in the United States. This department is culturally unique and maintains a long-standing tradition. The enormity of the San Francisco Police Department and its similarity to other large metropolitan police departments made this an interesting location to explore generational differences as it relates to cognitive hardiness, stress, and dysphoria (or job dissatisfaction). However, the hazardous work environment in policing, stringent rules, and relationships with the community may have created higher levels of dysphoria (or job dissatisfaction) among employees. It is certainly
plausible that these similar conditions could also heighten feelings of work-related stress and burnout among police officers (Morash, Harr, & Kwak, 2006).

The San Francisco Police Department was also one of several large police departments (e.g., Milwaukee, Baltimore, Philadelphia, New Orleans, and Memphis) which participated in the Obama-era Collaborative Reform Initiative, which was designed to help police interact more positively with local communities, focusing on providing real-time technical assistance to conduct investigations of local policing practices and issuing public reports of their investigations (Augenstein, 2018). Conversely, it is difficult to generalize these results to other police departments, particularly smaller ones across the United States.

**Implications of Findings**

Notwithstanding the noted limitations, the results of this study contribute to the existing body of knowledge of police officers under stress and provide additional information regarding cognitive hardiness as a mediator necessary for the effects of coping, and dysphoria (or job dissatisfaction), which was not predicted in this study. The cognitive hardiness theory posits that police officers can adapt and even thrive in stressful situations if they are able to transform difficulties into meaningful events using three basic dimensions, *Commitment* - Seeking involvement rather than withdrawal; *Control* - Struggling for influence rather than feeling powerless; and *Challenge* - Striving to learn from experience, whether positive or negative, rather than feeling threatened (Kobasa, 1979).

Over the years, researchers have placed considerable attention on the construct of
hardiness as an inner resource that may moderate the avoidant and emotional effects of stress coping on police officers. Hardiness theory derives from existential psychology, and the emphasis pertains to the perception individuals ascertain about themselves in relation to their environments (Kobasa & Maddi, 1977). Police officers who demonstrate cognitive hardiness believe they can uncover meaning in situations regardless of unsuccessful or successful encounters, and they can learn from their involvement in these experiences (Maddi, 2002).

A critical part of the conceptualization of the importance of hardiness for law enforcement is that the environmental circumstances encountered by police officers are inherently stressful, especially in today's world of social unrest, discontent and distrust of law enforcement and social media. When interacting with people and the community every day, police officers continually experience stressful challenges (Maddi, 2006). As an alternative, law enforcement agencies may possibly consider the utilization of a theoretically grounded instrument with predictive validity in its ability to impact variables related to stress such as cognitive hardiness (Bartone et al., 2013). Although cognitive hardiness has not been well studied in the law enforcement community, there is an increase in literature about cognitive hardiness in military literature which may be applicable to law enforcement (Bartone et al., 2013).

Bartone's research on cognitive hardiness has encouraged wellness and improved performance in an assorted group of individuals and military occupations. Individuals who endorse hardiness factors tend to be more optimistic when appraising stress, they believe they can control what happens, enjoy new situations and challenges, and are motivated and create their own sense of purpose. In contrast, those who exhibit less
cognitive hardiness tend to be more pessimistic and find change threatening (Bartone, 2000).

This research has serious implications for law enforcement agencies and administrators. Individuals who exhibit cognitive hardiness have stronger self-efficacy beliefs and confidence in their ability to solve problems, which leads to proactive stress coping strategies, and fewer negative beliefs concerning their occupation as police officers (Bartone et al., 2013).

Future Studies

The results of this study provide the basis for drawing several conclusions related to police stress. First, the findings suggest that police administrators should pay attention to the effects of how police officers cope with stress, and ways to improve their job satisfaction. Occupational and organizational stressors such as constant negative inter-agency differences, or differences with the community in which they serve, could result in negative or maladaptive coping strategies. To address how police officers cope with stress, police management should play a leading role in creating greater flexibility in accommodating police officers' professional and personal needs. In more practical terms, efforts need to be made actively to solicit input from police officers. For example, police stress training sessions targeting work conflict should be considered. Secondly, police administrations should begin to explore and develop programs that educate police officers on the significance of cognitive hardiness as a means to improve resiliency. Such programs would educate police officers in the importance of resiliency and stress management that the police profession needs in order to improve job satisfaction.
Finally, with regard to improving police officers' emotional and avoidance effects of coping and job satisfaction, police stress management programs should be tailored to fit the specific needs of a police department, beginning with recruits at the basic academy to veteran officers as part of their continuous professional training. Future training programs for police wellness would benefit by introducing different options for coping strategies and possible outcomes. This would provide the officers the option to make informed choices about what will work best for them in regard to managing work-related stressors. A sensible approach would involve the following three major components (McCarty et al., 2007): (a) assessment of police officers' physical and psychological stress, which includes identifying both internal and external stressors; (b) monitoring police officers' adaptive and maladaptive coping skills; and (c) effective use of appropriate intervention strategies such as peer counseling.

Police scholars and practitioners should continue to study police stress management with an eye on further exploring emotional and avoidance effects related to job satisfaction. Longitudinal studies of the Millennial cohort would help to increase our understanding of the importance of how internal/organizational stress impacts one's ability to effectively cope with and utilize resources to manage police officer stress.

Although none of these complex relationships in this study were upheld, this research did suggest potentially consequential relationships. The results of this study offer a rich source of information for future research on the crucial subjects of peace officer job satisfaction and overall officer coping and wellness. An area that is often overlooked when discussing the police stress and coping strategies, is the topic concerning the frequency of police officer suicides. Aamodt and Stalnaker (2001) state
that the estimated number of law enforcement suicides is 18.1 per 1,000,000, which is 52% greater than that of the general population. Even though suicide has been a known concern in the profession, very little has been done to address it even though first responders have PTSD and depression at a level five times that of civilians.

Law enforcement officers’ health and well-being may not receive as much attention as necessary, particularly if officers strive to appear invulnerable. In addition, law enforcement administration may also be impacted by police stress and not see the issues objectively.

Conclusion

The findings from this study demonstrate that specific stressors inherent in the occupation of law enforcement are important to understand regardless of generational cohort. The results of this study also suggest that the support structure of officers is complex, and that, in addition to further research, there is a need for development of embedded health and wellness programs within law enforcement agencies, such as the Los Angeles Police Department’s Behavioral Science Services.

Hopefully the present research will lead to enhanced mental health treatment responses and productive research and discussion on the topic of police stress, effective coping strategies, resiliency, and improve job satisfaction.
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Comparative Study of Cognitive Hardiness in Three Generations of Police Officers


doi:10.1007/s10869-010-9165-6


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Appendix A: Mediation Analysis Tradeoffs

The purpose of this appendix is to elucidate the advantages and disadvantages considered when the statistical approach for this study was made. The intent of this appendix is to separate the analysis of the tradeoffs from the body of the methodology and thereby improve the flow of the Methodology section of the study.

Mediation analysis has gotten a fair amount of attention from social science researchers and research methodologists in the last decade or two. The definitive work on the subject in the mid-'80s (Baron & Kenny, 1986) is still largely valid, but more recent research has resulted in important changes to mediation analysis. Briefly, the earlier notion that determining mediation is merely a process of testing each relationship in the direct and indirect paths for significance has proved not to be sufficient. Greater statistical power is obtained by testing the indirect effect as a whole, compared to just testing the two pieces of the indirect path (Kenny, 2015). Nevertheless, the current state of mediation analysis thought and associated software requires a researcher to make choices concerning the approach to take.

Arguably the simplest approach would be to use an up-to-date statistical package that performs all the necessary steps to test mediation. Andrew Hayes’ PROCESS plug-in, available for several major statistical packages, is an obvious choice. Based on Hayes’ decisions at various points in the analysis, this plug-in provides the necessary output for analysis of mediation. Moreover, it uses an impressive number of models or templates (currently over 70) for analyzing situations with multiple mediation, multiple moderation, and combinations of mediation and moderation. Hence, it provides a comprehensive analysis of mediation and moderation for a study such as this one.
On the other hand, *PROCESS* does not provide a number of statistics that could expose outcomes and issues in areas besides mediation and moderation. In this category are standardized coefficients (or betas) of a regression, and partial correlations coefficients. These statistics are important in determining effect sizes: partial correlations for individual coefficients, and betas for the relative effect sizes when a regression has multiple predictors. Moreover, this plug-in cannot be set up to produce many important pieces of diagnostic information. In this category are variance inflation factors (VIFs) of coefficients that can alert the researcher to multicollinearity problems. Likewise, the plug-in cannot produce information to find nonlinearity of tested relationships, non-normality of variables, non-normality of error terms, or heteroscedasticity.

On the other hand, the single biggest problem of running each of the hierarchical regressions without the aid of a plug-in is the difficulty of obtaining an overall significance of the indirect effect. Current methodological research suggests that being able to test the significance of this overall indirect effect is an important determinant of mediation (MacKinnon et al., 2002). The overall indirect effect coefficient is the product of coefficients from each part of the indirect path. That can be computed simply, but its significance is another matter. The Sobel Test of the indirect effect, which can be computed in a straightforward manner, suffers from the fact that it assumes a normal distribution – unlikely in most mediations (Kenny, 2015). Another approach is bootstrapping of the regressions, but it is difficult, without considerable programing, to set up bootstrapping in such a way as to get the significance of this product term. Yet another approach is to use Monte Carlo simulation. This also requires coding or a macro pre-coded to do the simulation. Hayes’ *McMed* macro (Hayes, 2013; Appendix. B) is a
relatively simple macro to do the simulation, and its use is also straightforward. Hence, one way to operationalize the individual hierarchical regressions approach is to use the McMed macro to obtain the confidence interval for the indirect effect of the mediation.

The above situational analysis suggests that the individual hierarchical regression approach should be used, augmented with the McMed macro. However, this study incorporates not just a mediation, but two mediations, each of which are moderated. Performing the moderation testing with individual hierarchical regressions can be performed without undue difficulty, but the moderated mediations provide some complexity when it comes to significance of the indirect effects. Because the mediations are moderated, an important consideration is the appearance of conditional indirect effects, conditioned on the range of the moderator. In other words, the indirect mediation effect (and its $p$-value) will vary depending on a particular value of the moderator. For some values, it may be significant and for other values it may not be significant. Hence, the conditional indirect significance may be an important characteristic to capture in this study. There is no easy way to obtain the conditional indirect effect other than to use a plug-in like PROCESS.

The above analysis led to a hybrid approach to testing for this study. The hybrid approach employed is explained in some detail in the Methodology section of this study.
Appendix B – Power Analysis Report

Power Analysis

Power analysis for a linear regression is normally performed by specifying (a) the number of predictors in the regression, (b) an alpha level, (c) a minimum desired effect size ($R^2$ in the case of a linear regression), and (d) a power level for the analysis which is conventionally set at 0.80 (implying an 80% probability of finding the minimum desired effect; Borenstein, Rothstein, & Cohen, 2008). Since small effects are of little importance to practitioners, and since it is reasonable to assume that a key objective of this study is to inform practice, the minimum discoverable effect size was set such that at least a moderate effect size could be discovered. To that end, the coefficient of determination ($R^2$) for this analysis was set at 0.10\(^7\).

Power Analysis Software Selection

There are a variety of available computer programs that can calculate an à priori sample size, using the above input parameters. $G$ Power (v3.1.9.2) was chosen for this analysis since it had the required capabilities, had comprehensive documentation, and had an ability to produce useful graphics. $G$ Power was developed principally at the University of Dusseldorf (Heine, 2016), and has been used for research design at the University of California at Los Angeles (UCLA, 2016), among other institutions.

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\(^7\) This effect size value was set in a somewhat conservative manner. A value of 0.15 is often used as a midpoint for a moderate effect size (Cohen, 1988).
Sample Size Determination

The moderated doubly mediated regression proposed for this study has a four-step hierarchical regression sequence. Each of these four hierarchical regressions needs to have sufficient power for the discovery of at least a moderately sized effect. Importantly, however, sample size determination need only be performed for the hierarchical regression step with the largest number of terms since the regression with the largest number of terms will need the largest sample size, ceteris paribus. The largest number of terms occurring in the four-step regression sequence is six. This occurs in both Steps 2 and 4 (three controls and four hypothesized variables). Hence, power analysis was performed for six total predictors.

GPower was configured to analyze a linear multiple regression with fixed coefficients (i.e., based on the general linear model rather than the generalized linear model\(^8\)). The effect size was set at 0.10, a conservative interpretation of a moderate effect size (Cohen, 1988, 1992), by convention the power (1-\(\beta\)) was set to 0.80 (an 80% probability), the number of predictors was set to 6 as noted above, and the alpha level was set to 0.05. This resulted in a sample size (\(n\)) of 143. Table 31 shows the inputs and outputs of this power analysis. Figure 31 graphically depicts the critical \(F\) determined in this analysis in relation to alpha and beta. Figure 32 is a graph of various power values

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\(^8\) The generalized linear model in a sense extends the general linear model in that both the intercept and slope of the linear model need not be fixed, but can be random variables (modeled by additional equations). It can also handle both cross-sectional and longitudinal (e.g., time-based) data (often referred to as generalized linear mixed model). This model can also handle a link function that transforms the dependent variable so that nonlinear relationships of the predictors to the dependent variable can be handled (logistic regression is special case of this ability; Finkel, 1995; Garson, 2013; Hox, 2010; Raudenbush & Bryk, 2002). None of these aspects of the generalized linear model apply to this study. Hence, the fixed coefficient approach is appropriate.
against sample sizes for the effect size, alpha, and number of predictors used in this analysis.

Table B1

<table>
<thead>
<tr>
<th>Input Parameters</th>
<th>Output Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect Size</td>
<td>Lambda</td>
</tr>
<tr>
<td>Alpha</td>
<td>Critical F</td>
</tr>
<tr>
<td>Power (1-β)</td>
<td>Numerator df</td>
</tr>
<tr>
<td>Number Predictors</td>
<td>Denominator df</td>
</tr>
<tr>
<td></td>
<td>Sample Size</td>
</tr>
<tr>
<td></td>
<td>Actual Power</td>
</tr>
<tr>
<td>0.10</td>
<td>14.30000000</td>
</tr>
<tr>
<td>0.05</td>
<td>2.1658823</td>
</tr>
<tr>
<td>0.80</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>0.8011495</td>
</tr>
</tbody>
</table>

*Figure B1. Critical F in relation to alpha and beta*

*Figure B2. Power versus Sample Size*
Summary and Conclusion

Effect size is an important consideration for any research, and since most research intends, at least in part, to inform practice (Grissom & Kim, 2012) at least moderate effect sizes should be discoverable. Because this study’s four-step hierarchical regression sequence contained regressions with a maximum of six predictors, the power analysis was performed for that number of predictors. With that number of predictors, a moderate or large effects discovery setting, and conventional probabilities of finding those effects, this analysis determined the need for a minimum of 143 valid samples.
Appendix C - Informed Consent

Fielding Graduate University

*Cognitive Hardiness in Millennial Generation Police Officers*

You have been asked to participate in a research study conducted by William P. Ahern, M.A., a doctoral student in the School of Psychology at Fielding Graduate University, Santa Barbara, CA. Raymond Hawkins, Ph.D., supervises this study. This research involves the examination of the generational differences between “Millennial” police officers and those of a combined Baby Boomer and Generation “X” cohort, and whether cognitive hardiness moderates the relationship between the emotional effects of coping and the avoidance effects of coping upon dysphoria, and as part of William Ahern’s Fielding dissertation.

You are being asked to participate in this study because you have been identified as police officers that are currently employed as full-time officers and who are no longer in a training status. You are also receiving this request because your law enforcement agency has given their permission for recruitment. However, your law enforcement agency will not be notified whether you chose to participate, and any information you provide will be kept strictly confidential. Before you agree to participate in this research study, it is important that you read and understand the information provided in this Informed Consent Form. If you have any questions, please ask the researcher for clarification.

Why Is This Study Being Done?

Over the past two decades there has been much attention given to the issue of stress among police officers. The law enforcement profession and the role of a police officer is said to be one of the most stressful occupations, and law enforcement agencies recognize that stress is part of the profession and working conditions. Chronic exposure to environmental risks often creates a lasting impact on police officers. This may manifest in increased cynicism, hyper-vigilance, substance abuse, and other “career ending” related issues. In today’s police culture, officers face new external sources of stress such as increased media attention and the frustrations with other components of the criminal justice system. Those who exhibit cognitive hardiness, and as a result exhibit higher resilience, improved coping skills, and effective performance under a range of stressful conditions. The purpose of this study is to determine whether police officers that exhibit a strong commitment to the profession will utilize their cognitive resiliency to create a more engaging and worthwhile working environment. Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential threats more effectively.
How Many People Will Take Part in The Study?
An estimated sample of 200 -120 participants will be needed in order to obtain meaningful results.

What Is Involved in The Study?
If you agree to participate in this study, you will be instructed to complete the survey, which are taken from three empirically supported measures. For example, you will be asked to rate how often you feel emotionally drained from your work or burned, or how you felt ignored, or felt socially isolated. Your responses to these questions will be confidential and collected in an anonymous manner.

How Long Will I Be in The Study?
The study involves completing three surveys (approximately 10 to 15 minutes each) and demographics questionnaire (approximately 10 minutes), to be arranged at your convenience. The total time involved in participation will be approximately 30 to 60 minutes.

What Are the Risks of The Study?
The risks to you are considered minimal and there is little likelihood that you will experience emotional discomfort during or after your participation. At most, it may bring to light some of the struggles you have encountered in regards to being a law enforcement officer. Should you find yourself in distress after completing this survey, please contact your behavioral science unit.

What Are the Benefits to Taking Part in This Study?
By participating in this study, you may develop greater personal awareness of your level of stress, burnout, feelings toward your obligations as a police officer, and the impact that recent experiences have had on your coping ability. In addition, as a result of your participation in this research, law enforcement may gain valuable information regarding police officers that utilize their cognitive resiliency, while exhibiting a strong commitment to the profession. Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential threats more effectively.

What about Confidentiality and Protection?
Study related records will be held in confidence. Your consent to participate in this study includes consent for the researcher, supervising faculty, and possibly a confidential Research Assistant who may also see your data. You research records may also be inspected by authorized representatives of the Fielding Graduate University, including members of the Institutional Review Board or their designees. They may inspect, and photocopy as needed, your records for study monitoring or auditing purposes. In addition, parts of your record may be photocopied.

The information you provide will be kept strictly confidential. The informed consent forms and other identifying information will be kept separate from the data. Any records
that would identify you as a participant in this study, such as informed consent forms, will be destroyed by or before December 2019, approximately three years after the study is completed. The results of this research will be published in my dissertation and possibly published in subsequent journals, books or presentations.

**Participation in Research Is Voluntary:**
You are free to decline to participate or to withdraw from this study at any time, either during or after your participation, without negative consequences. Should you withdraw, your data will be eliminated from the study and will be destroyed. The researcher is also free to terminate the study at any time.

**Compensation:**
No compensation will be provided for participation.

**Additional Information:**
If you have any questions about any aspect of this study or your involvement, please tell the Researcher before signing this form. You may also contact the supervising faculty if you have questions or concerns about your participation in this study. The supervising faculty has provided contact information at the bottom of this form.

You may also ask questions at any time during your participation in this study.
If at any time you have questions or concerns about your rights as a research participant, contact the Fielding Graduate University IRB by email at irb@fielding.edu or by telephone at 805-898-4034.

To participate in this study, you print your name and provide your signature under the Statement of Consent. By consenting, you are indicating you have read, understood, and agree to participate in this research. Please print a copy for your records.

Raymond Hawkins, Ph.D.
rhawkins@fielding.edu
Fielding Graduate University
2020 De La Vina Street
Santa Barbara, CA 93105-3814
805-687-1099

William P. Ahern, M.A.
wahern@email.fielding.edu
1060 Etheldore Street
Moss Beach, CA 94038
(415)314-9968

I have read the above informed consent document and have had the opportunity to ask questions about this study. I have been told my rights as a research participant, and I
voluntarily consent to participate in this study. By providing my signature below, I am agreeing to participate in this research study.

**Statement of Consent:**
I have read the above information. I have asked questions and received answers. I consent to participate in the study.

Printed Name of Participant: ________________________________

Signature: ___________________________________ Date __________

Signature of
Researcher: ________________________________ Date __________
Appendix D: DEMOGRAPHIC QUESTIONNAIRE

The following questionnaire is designed to obtain some background information about you. Please answer all questions as completely as possible; there are no right or wrong answers. This questionnaire, along with other questionnaires that you will be filling out, is completely confidential and anonymous. Thank you for your time and cooperation.

1) Date: ___/___/___

2) Age: Provide Birth date

   _____/_____/____

3) Gender: Please specify your gender.
   ( ) Male
   ( ) Female
   ( ) Transgender
   ( ) Other
   ( ) Prefer not to answer

4) Ethnic Origin (or Race): Please specify your ethnicity.
   ( ) White/Caucasian
   ( ) Black or African-American
   ( ) Hispanic or Latino
   ( ) Native American or American Indian
   ( ) Asian/Pacific Islander
   ( ) Other (please specify) ________________
   ( ) Prefer not to answer

6) Marital Status: What is your marital status?
   ( ) Single (Never Married)
   ( ) Married
   ( ) Separated
   ( ) Divorced
   ( ) Widowed
   ( ) Other (please specify)
   ( ) Prefer not to answer

7) Dependents/Caregiving: Not including yourself, how many dependents (children or otherwise) are you the primary caregiver for?
Number of Dependents: ______________.

8) Where do you currently reside?
   ( ) At home with parents
   ( ) Alone in apartment/house
   ( ) In house/apartment with children and with spouse/significant other
   ( ) With Children in apartment/house
   ( ) With roommates in house/apartment
   ( ) With spouse/significant other in apartment/house

**Employment Status: Please specify your employment status. Please check all that apply.**

9) How long have you worked in law enforcement?
   ________ Years.

10) How long have you worked in your present police department?
    ________ Years.

11) What is your present rank?
    ( ) Police Officer (Q2 – Q4)
    ( ) Inspector (Q380)
    ( ) Sergeant (Q50)
    ( ) Lieutenant (Q60)
    ( ) Other (please specify) __________________________

12) How long have you been in your present rank?
    ________ Years.

13) Socioeconomic Status: What is your current annual household income in U.S. dollars?
    $ ____________.

**Education Status: Please check.**

14) Education:
    ( ) GED
    ( ) High School Graduate
    ( ) Junior College – Years ______
    ( ) College – Years ______
    ( ) College - Undergraduate (Bachelor’s Degree)
    ( ) College - Military (West Point, Annapolis, Air Force Academy)
    ( ) Graduate School (Master’s Degree)
( ) Graduate School (PhD, J.D., M.D.)
( ) Other
( ) Prefer not to answer

**Military Status: Please check all that apply.**

15) Military Service ( ) Yes ( ) No

16) Currently Military Reservist ( ) Yes ( ) No

17) Military Special Operations Commands (Ranger, Special Forces, Recon, SEAL)
  ( ) Yes
  ( ) No

**General Health Questions: Please check all that apply**

17) Frequency of Exercise
  ( ) Never
  ( ) Once a week
  ( ) Two – Three times a week
  ( ) More than Four days a week
  ( ) Prefer not to answer

18) Do you Smoke
  ( ) Yes
  ( ) No
  ( ) Prefer not to answer

19) Consume Alcohol
  ( ) Yes
  ( ) No
  ( ) Prefer not to answer

20) Prescription Medication
  ( ) Yes
  ( ) No
  ( ) Prefer not to answer

21) Do you consider your over-all health as:
  ( ) Poor
  ( ) Average
  ( ) Good
  ( ) Excellent
  ( ) Outstanding
  ( ) Prefer not to answer
22) Significant Life Experiences: Over the past 12 months, have you experienced any of the following (please check all that apply)?

( ) Major personal injury or illness ( ) Withdrawal/isolation from social network
( ) Pregnancy ( ) Financial stress
( ) Poor diet ( ) Frequent mood swings
( ) Poor sleep habits ( ) Difficulty with concentration
Appendix E: Letter to the San Francisco Police Department

San Francisco Police Department
1245 3rd Street
San Francisco, CA 94158

Attention: Police Chief William Scott

Dear Chief Scott

My name is William Ahern and I am a graduate student at Fielding Graduate University where I am finishing my doctorate degree in clinical psychology. I am currently working on my dissertation, which is a generational study of Millennial police officers. It is proposed that those “Millennial” police officers who exhibit cognitive hardiness will exhibit higher resilience, healthier coping abilities, and effective performance under a range of stressful conditions. Overall, police officers who exhibit a strong commitment to the profession will utilize their cognitive resiliency to make their working environment more engaging and worthwhile. Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential environmental threats more effectively.

My interest in this topic comes after a long and diverse career in law enforcement. Being a police officer for more than three decades I have witnessed many changes which in one form or another impact the way officers handle stress. Although job related stress is certainly not unique to police officers, the intensity and variety of stressors officer’s encounter are markedly different from other professions. Within the past two years, we as police officers have come under amplified scrutiny of our daily police activities, stories of misconduct, and police officers may find themselves being unjustly categorized by the civilian public, only to be exacerbated by social media, thereby intensifying unwarranted stress.

I am hoping you will be interested in having the San Francisco Police Department Officers to participate in this innovative study. This would entail officers completing confidential questionnaires taking about 30 minutes. I will be happy to provide you with the research results in either written form or in a presentation. I would also be interested in meeting with you to further explain this study and to provide an example of the questionnaire packet and discuss any concerns or questions you may have. Thank you again for taking the time to read about this very important research.

Sincerely,

William Ahern, M.A.
Appendix F: Multiple Affective Adjective Checklist – Revised (MAACL-R)

This scale may be obtained from:

WILLIAM P. AHERN
FIELDING GRANDUATE UNIVERSITY
2020 De La Vina Street
Santa Barbara, CA 93105-3814
APPENDIX G: Coping Inventory for Stressful Situations (CISS)

This scale may be obtained from:

WILLIAM P. AHERN
FIELDING GRADUATE UNIVERSITY
2020 DeLaVina Street
Santa Barbara, CA 93105-3814
APPENDIX H: Request Permission to use the Personal Views Survey Questionnaire (PVS III-R)

September 1, 2016

The Hardiness Institute, Inc.
4425 Jamboree, Suite 140
Newport Beach, California 92660

Dear Sir or Madame

I am a graduate student at Fielding Graduate University, Santa Barbara, California. I am in the process of preparing my dissertation. The purpose of this study is to examine generational differences between “Millennial” police officers and those of a combined Baby Boomer and Generation “X” cohort who exhibit cognitive hardiness, and as a result exhibit higher resilience, improved coping skills, and effective performance under a range of stressful conditions. Police officers who exhibit a strong commitment to the profession will utilize their cognitive resiliency to make their working environments more engaging and worthwhile. Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential threats more effectively. This study will focus on Millennial generation police officers. The sample consists of 250 police officers employed by a major metropolitan police department in the San Francisco Bay Area.

I am seeking permission to use the Personal Views Survey Questionnaire in my research study. I understand that the use of the PVS III-R is through your online administration, and there is a fee for the materials.

Please indicate your approval of this request by signing the letter where indicated below and returning it to me as soon as possible using the self-addressed envelope. Your signing of this letter will also confirm that you own the copyright to the above-described material.

Very truly yours,

William Ahern, MA
wahern@email.fielding.edu
(415)314-9968

For copyright owner use:

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:
By: Dr. Salvador Maddi, Ph.D.

Title: Professor Emeritus of Psychological Science Ph.D.

Date: October 3, 2017
APPENDIX I: Request Permission to Conduct and Publish Research Obtained from the San Francisco Police Department

San Francisco Police Department

To: Chief William Scott  
Chief of Police  
San Francisco Police Department

Through: Captain Michael Connolly #2129  
Officer in Charge  
Professional Standards and Principled Policing Bureau

From: Officer William Ahern #130  
Professional Standards and Principled Policing Bureau

Date: February 20, 2017

Subject: Submitting a Letter of Request to Chief of Police William Scott to gather data from SFPD for a dissertation in clinical psychology

Discussion:

I am a doctoral candidate attending Fielding Graduate University where I am completing a doctorate degree in clinical psychology. The focus of my dissertation is a generational study of Millennial police officers. It is proposed that those “Millennial” police officers who exhibit cognitive hardiness will exhibit higher resilience, healthier coping abilities, and effective performance under a range of stressful conditions. Overall, police officers that exhibit a strong commitment to the profession will utilize their cognitive resiliency to make their working environment more engaging and worthwhile. Moreover, police officers with stronger resiliency will manage unanticipated challenges or potential environmental threats more effectively.

My interest in this topic comes after a long and diverse career in law enforcement. Being a police officer for more than three decades I have witnessed many sociocultural changes which in one form or another impact the way officers handle stress. Although job related stress is certainly not unique to police officers, the intensity and variety of stressors police officer's encounter are markedly different from other professions. Within the past two years, we as police officers have come under amplified scrutiny regarding our daily police activities. The media increasingly has reported stories of alleged police misconduct. Police officers may find themselves being unjustly categorized by the civilian public, only to be exacerbated by social media, thereby intensifying unwarranted stress.

The benefits of my research would provide the San Francisco Police Department with valuable information regarding recruitment, training and retention by identifying protective factors associated with higher resiliency. In addition, knowledge derived from this study could help with the reduction of potential stress related workers compensation claims.
1. While the "Millennial" generation of police officers are beginning their careers during a time of intense criticism from the community and social media, resilient individuals tend to perceive their environment as satisfying and less menacing. Many of the "Millennial" generation of police applicants are likely to be college graduates with different professional expectations than their predecessors. The "Millennial" generation of applicants might have less organizational commitment than those of previous generations. Officer may decide to only stay in law enforcement three to five years, or pursue other career endeavors, which has an impact on retention. This trend creates difficulties for police departments, which invest considerable time and resources in selecting and training officers, only to have them leave after a shorter term than expected.

2. My study will seek to investigate whether cognitive hardness can effect changes in "Millennial" police officers such that they develop more resilience in their ability to deal with stress associated with the law enforcement profession. For example, hardy persons tend to perceive stressful events as under their control and remain optimistic about their ability to manage stressors. Those officers are confident in themselves and their abilities when dealing with adverse situations.

I am hoping you will be interested in allowing the San Francisco Police Department Officers to participate in this innovative study. This would entail officers completing confidential questionnaires taking about 30 minutes. I will be happy to provide you with the research results in either written form or in a presentation. I would also be interested in meeting with you to further explain this study and to provide an example of the questionnaire packet and discuss any concerns or questions you may have. Thank you again for taking the time to consider this very important research.