INVESTIGATING THE RELATIONSHIP AMONG PERSONALITY CHARACTERISTICS, SAFETY MOTIVATION AND SAFETY PARTICIPATION: SAFETY INCENTIVES AS A MODERATOR

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THESIS TITLE: INVESTIGATING THE RELATIONSHIP AMONG PERSONALITY CHARACTERISTICS, SAFETY MOTIVATION AND SAFETY PARTICIPATION: SAFETY INCENTIVES AS A MODERATOR

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This study is dedicated to God Almighty

and

to the memory of my late Dad Dr. Fola Osibogun

Abstract

This study extends recent research on the conceptual relationships defined by the Integrative Model of Workplace Safety (Christian et al, 2009). It assesses the predictive relationship that exists between personality characteristics, safety motivation and safety participation and the moderating effect of safety incentives. A survey of previously validated measures was administered via Amazon's Mechanical Turk to 178 participants currently employed in the healthcare industry in the United States. Multiple regression analysis was carried out for the interactions between HEXACO personality traits (honesty-humility, conscientiousness and emotionality) and types of safety incentives (tangible, intangible, no incentive or disincentive) to determine the resultant effect on safety motivation outcomes. The main effects hypothesis for honesty-humility and conscientiousness were supported as predictors of safety motivation outcomes, while emotionality was not predictive of safety motivation outcomes. Safety incentives did not significantly alter the main effects of honesty-humility and conscientiousness on safety motivation outcomes. However, intangible incentives did interact significantly with emotionality in predicting safety motivation outcomes.

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Chapter 1: Introduction

All over the world, thousands of work-related deaths, injuries and illnesses are being recorded each year across various industries in every country (Kotze & Steyn, 2013; Teo & Ling, 2009). In the year 2014 alone, the United States census of occupational injuries recorded 4,679 fatal workplace injuries and nearly 3.0 million non-fatal workplace injuries (Bureau of Labor Statistics, U.S. Department of Labor, 2014). In 2012, statistical records from the Association of Workers' Compensation Boards of Canada (AWCBC) showed that there were at least 672 work-related injuries every day and 977 workplace related fatalities in Canada. Hamalainen et al. (2006) estimated occupational accidents and fatality rates in established market economies (e.g. US, Canada, Greece, Ireland, United Kingdom) to be 3,240 and 4.2 per 100,000 workers respectively. For former socialist economies like Russia, the estimate was 10,000 and 13 per 100,000 workers. Emerging economies such as India and China have rates similar to Russia (8,700 and 11.4 per 100,000 workers for India and; 8,028 and 10.5 per 100,000 workers for China), while some Asian, African, Latin American and Middle Eastern countries have accident rates ranging from 16,000-18,000/100,000 and fatality rates of 20-25/100,000.

The alarming rate of workplace incidents that are recorded annually shows that there is a need to conduct more research on the safety and well-being of workers, particularly in high risk industries such as construction, manufacturing and transportation (Christian et al., 2009). Studies on workplace safety indicate the concern over accident and fatality rates, and the need to better understand the causes and consequences of workplace incidents (Barling, Kelloway, & Iverson, 2003; Beus, Dhanani, & McCord, 2015; Cellar, Nelson, Yorke, & Bauer, 2001; Christian et al., 2009; Jones, 1993; Kotze & Steyn, 2013; Teo & Ling, 2009).

Integrative Model of Workplace Safety

A meta-analysis carried out by Christian et al. (2009) resulted in the development of an integrative model of workplace safety. Based on an analysis of 90 studies on safety, a list of predictors and operational measures for workplace safety was generated. The resulting conceptual model indicated that safety climate and personality characteristics are direct predictors of safety motivation and knowledge which in turn have a direct influence on safety performance (safety compliance & safety participation) and the resulting safety outcomes (accidents and injuries). Christian et al. (2009) identified numerous antecedents to safe behavior in the workplace then classified these antecedents into distal and proximal factors where-in the distal factors were posited to predict the proximal factors. Distal factors included person-related factors such as personality characteristics and job attitudes while the situation-related factors referred to safety climate and leadership. The proximal person-related factors which are predicted by distal factors are safety motivation and safety knowledge.

More specifically, Christian et al.'s model (2009) suggests a predictive relationship between the personality characteristics of conscientiousness, neuroticism, extraversion, locus of control and propensity for risk taking and safety motivation. Safety motivation then influences safety compliance and participation. Safety participation refers to the individual adoption of a personal responsibility to safety through actions that enhance the overall safety of the organization such as communication, stewardship, exercising rights/whistle-blowing, civic virtue and initiating safety-related change. Safety compliance refers to an individual's commitment to following safety rules and procedures, using protective equipment and practicing risk reduction (Christian et al., 2009). Safety compliance and participation ultimately influence the rate of accidents and injuries that occur in the workplace. However, the meta-analytic study suggested that safety motivation is

a stronger predictor of safety participation while safety knowledge is a stronger predictor of safety compliance.

HEXACO Personality Model and the "Big Five"

In addition to the work by Christian et al. (2009), many other studies have shown that individual personality differences play an important role in the extent to which individual workers participate in and comply with behavioral safety measures (Barling et al., 2003; Cellar et al., 2001; Christian et al., 2009; Kotze & Steyn, 2013). Most existing research on the personality-safety relationship used the Five-Factor Model of personality as the measure of individual personality differences (Arthur & Graziano, 1996; Cellar et al., 2001; Christian et al., 2009; Kotze & Steyn, 2013). The five-factor model (FFM) of personality popularly referred to as the "big-five" (McCrae, Costa, Del Pilar, Rolland, & Parker, 1998) is a broad representation of five variations of personality traits that depict the tendency of individuals to consistently behave in a way that differs from other individuals. The FFM consists of five personality traits which are: neuroticism, extraversion, openness to experience, conscientiousness and agreeableness.

Recent research on personality dimensions has resulted in the development of the HEXACO Model of Personality (Lee & Ashton, 2004). The HEXACO is a personality model that presents six personality traits that were observed among personality-descriptive adjectives in the lexical studies of personality structure. The HEXACO model is an acronym for: honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience. The major difference between the HEXACO and the FFM is the discovery of a sixth factor, honesty-humility, which had not emerged in earlier studies of personality structure. This new personality dimension of honesty-humility is consistently defined by terms such as honest, sincere, and modest

versus deceitful, pretentious and conceited (Lee & Ashton, 2004). The honesty-humility personality dimension represents a personality trait reflected in a reluctance versus a willingness to gain undue advantage over others which is not adequately captured by any of the FFM (Ashton et al., 2004). A second difference between the HEXACO and the FFM is that in the HEXACO model, agreeableness and emotionality are rotational variants in that the trait neuroticism in the FFM encompasses anger whereas, in the HEXACO, emotionality is more a reflection of emotional stability and harm avoidance tendencies without anger while trait agreeableness captures trait hostility.

To the best of my knowledge, no research has been conducted that tests the HEXACO model as a predictor of safety motivation. Therefore, one aim of this study is to examine the influence of the HEXACO personality characteristics on safety outcomes. More specifically, Iwill investigate the role of the trait honesty-humility (H-H) in predicting safety performance.

Self-Determination Theory of Motivation

In Christian et al.'s model (2009) personality is suggested to be a predictor of safety motivation. Motivation refers to the willingness of an individual to do something or behave in a certain way. Safety motivation reflects the willingness of an individual to behave safely. Individuals are motivated to enact safe behaviors in the workplace for reasons which differ from person to person. Ryan & Deci (2000), described motivation as a phenomenon that differs in both level (i.e. how much motivation) and orientation (i.e. what type of motivation). Self-determination theory (Ryan & Deci, 2000) distinguishes between intrinsic motivation and extrinsic motivation based on the reasons or goals that reinforce an action. Intrinsically motivated individuals perform certain activities because of the personal satisfaction or enjoyment derived from that activity. On

the other hand, extrinsically motivated behaviors are influenced by instrumental factors which could range from the aim to receive monetary rewards to a desire to avoid punishment. Although, intrinsic motivation is more desirable in individuals, one cannot always rely on intrinsic motivation to foster certain kinds of behavior. Research has shown that personality differences account for how people differ in what motivates them to perform certain activities or behave in a certain way (Ryan & Deci, 2000; Christian et al., 2009).

High risk industries like construction and manufacturing place a high importance on encouraging safe behavior of workers in the workplace. Workers are sometimes less intrinsically motivated to behave safely especially when the proposed safety measures may slow down their work process or may cause them some form of discomfort. However, numerous industries have developed various means of motivating workers to embrace safe behaviors by using various forms of incentives such as monetary rewards, gifts, recognition, and feedback. Safe behaviors may be intrinsically motivated in individuals to avert naturally occurring consequences such as health and safety outcomes, comfort or discomfort of using safety related equipment, effect on production speed and reactions or acceptance of coworkers (Ford & Tetrick, 2008). Organizations may extrinsically motivate the reinforcement of safe behaviors by offering incentives. On the other hand, organizations may sometimes inadvertently reinforce unsafe behavior by rewarding potentially unsafe behaviors that increase production.

Safety Incentives

Many employers use safety programs to motivate safe work behaviors by providing some kind of incentives to workers. Extensive research has investigated the effectiveness of safety incentives in motivating workers' safe behavior. Most have indicated that safety incentives are

effective in improving safety (Sulzer-Azaroff et al., 1999; Maslen, 2014, Haines et al., 2001). However, according to Haines et al. (2001), safety incentives, though effective in reducing accidents, may not always produce the desired effect. Some studies have also shown that incentives may also lead to dishonest practices such as non-reporting of risks and incidents (Krause, 1998; Saracino et al., 2015; Tuncel, Lotlikar, Salem, & Daraiseh, 2006).

Although research has been somewhat mixed on the effectiveness of safety incentives in improving safety, some studies have revealed a drastic reduction in safety performance once incentives were withdrawn (Krause, 1998; Lipscomb, Nolan, Patterson, Sticca, & Myers, 2013; Sulzer-Azaroff, 1999). More so, Krause argues that there are not sufficient empirical studies to substantiate how effective safety incentives are in influencing safety outcomes (Krause, 1998; Sulzer-Azaroff, 1999). According to Saracino et al. (2015), safety motivation could be intrinsic, extrinsic or a combination of both. Extrinsic motivation is dependent on external factors and facilitated by instrumental incentives such as monetary gifts or punishments. Intrinsic motivation is the opposite of extrinsic motivation in that it is motivated by a desire to do something because it is the right thing to do. However, intrinsic motivation, though obviously desirable in employees to resolve the problem of safety, is not always present which often necessitates the use of incentives (Saracino et al., 2015). Individuals differ in their likes and dislikes, and preferences may change with time which makes it difficult to identify which incentives are most effective (Goodrum & Gangwar, 2004). I therefore suggest that personality differences will influence the effectiveness of incentives in motivating safe behavior in individuals.

There are various types of incentives that have been used to motivate safe behaviors, these may be broadly categorized into three types: a) tangible incentives (cash/prizes), b) intangible incentives (feedback, awards or recognition), and c) disincentives (disciplinary measures; fines or

suspension from work). Each of these incentives have proven to be effective in improving safety, however the use of feedback and recognition have been identified as the most effective in reinforcing safe behavior when appropriately applied (Geller, 1997; Goodrum & Gangwar, 2004; Haines Iii, Merrheim, & Roy, 2001; Teo & Ling, 2009). While existing studies on incentives have identified monetary reward to be the most popular kind of incentive, it has also been known to lead to the most undesirable results such as under-reporting or non-reporting of incidents and increased perceptions of unfairness among workers (Lipscomb et al., 2013; Probst, Probst, Graso, Estrada, & Greer, 2013; Teo & Ling, 2009). According to Teo & Ling (2009), the use of economic disincentives in reinforcing safe behavior of workers on the worksite proved to be effective in enhancing safe behavior, however it led to an even greater problem of non-reporting of incidents which greatly undermines the overall safety performance in the long run. In light of this, various studies on safety incentives have advocated for the minimal use of disciplinary measures in reinforcing safe behavior (Goodrum & Gangwar, 2004; Lipscomb et al., 2013; Teo & Ling, 2009).

To the best of my knowledge, the influence of incentive types on the relationship between personality and motivation has not previously been tested. Neither has any study tested the influence of the H-H personality dimension on safety motivation and participation. Therefore, a key aim of this study is to determine if different incentive types are more effective safety motivators for different personality types. I believe that, the H-H personality dimension in the HEXACO personality model will be an important predictor of an individual's integrity and tendency to engage in delinquent behavior (Lee, Ashton, & de Vries, 2005) with regards to safety participation in the workplace. The nomological model in figure 1 is based on the initial work by Christian et al., but depicts the relationships between personality characteristics, safety motivation, safety incentives and safety participation as proposed in this study. This thesis is divided into 6

chapters. In subsequent sections of this paper, existing literature on personality, safety motivation, safety incentives and safety performance measures will be reviewed to develop the hypotheses for the model in Figure 1.1, followed by the theoretical model and hypotheses development. Chapter 4 reviews the methodology used to assess the research model. The results are discussed in chapter 5 and in the final chapter I discuss the research findings, potential study limitations and possible directions for future research and implications for theory and practice.

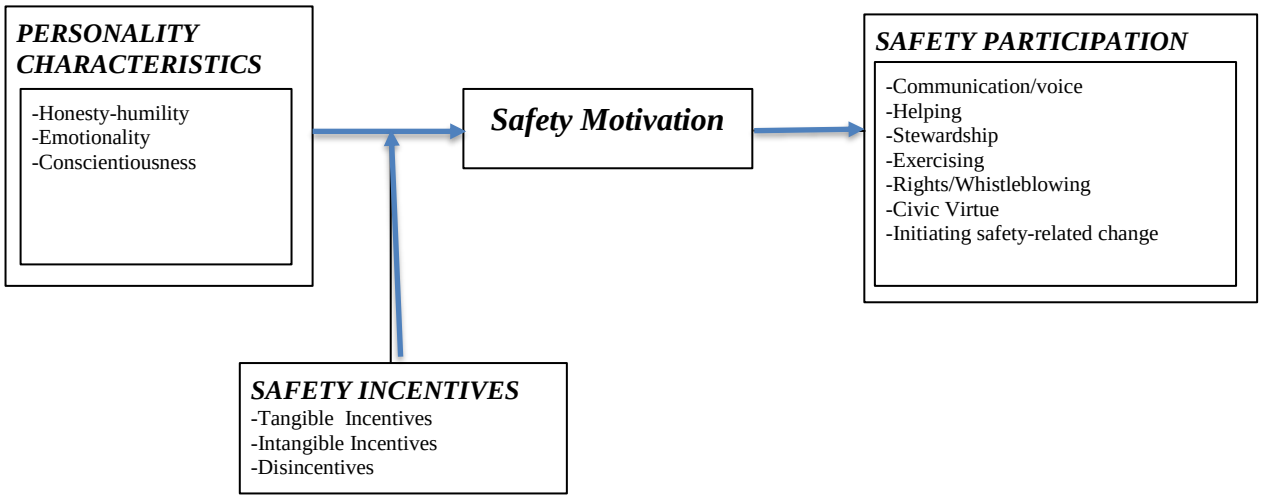

Figure 1.1 Hypothesized relationships among study variables. A Nomological model of Safety Participation; Modified from an Integrative model of workplace safety (Christian et al., 2009)

Chapter 2: Review of the literature

Personality and motivation

Previous research into personality differences have been aimed at predicting job performance (Barrick & Mount, 1991; Salgado, 1997; Smith, Craig Wallace, & Jordan, 2016; Vaiman, 2011), other studies have been aimed at using personality differences to predict accident involvement (Arthur & Graziano, 1996; Cellar et al., 2001; Kotze & Steyn, 2013; Sweeney, 1998) and risk taking (Trimpop, Kerr, & Kirkcaldy, 1998; Vries, Vries, & Feij, 2009; Weller & Tikir, 2011). Several research works have investigated how personality factors influence safe behavior in the workplace by analyzing various personality factors and cognitive factors (Hansen & Hansen, 1989; Kotze & Steyn, 2013; Wallace, 2003), self-efficacy (Cellar, Yorke, Nelson, & Carroll, 2004), and safety locus of control (Haines Iii et al., 2001; Jones, 1993). The majority of these existing studies used the five factor model (FFM) of personality in measuring personality traits. However, these measures of personality fall short in their ability to predict integrity-based behaviors. More current studies of personality traits are able to fill this gap using the HEXACO personality model.

The HEXACO personality dimensions offer an improvement over the FFM for two reasons. Firstly, the FFM was based on studies using the English language alone while the HEXACO has been repeatedly validated in lexical studies constructed in diverse languages (Lee et al., 2005). Secondly, the FFM was founded on a relatively short list of adjectives compared to the HEXACO model. In contrast to the FFM of personality dimensions, the HEXACO model is a recent advancement in personality psychology that proposes six personality dimensions that provide an optimum description of the various personality traits that are routinely exhibited by individuals (Ashton, Ashton, Lee, Perugini, & Szarota, 2004).

The inclusion of the honesty-humility (H-H) trait in the HEXACO personality structure has shown the validity of the model in predicting personality outcomes associated with integrity (Ashton & Lee, 2008), an important advantage in which the FFM falls short. In this regard, the HEXACO personality model provides a more optimal representation of personality traits which makes it more effective in predicting important variables in industrial and organizational psychology (Lee et al., 2005), and which also includes tests of individuals' integrity and tendency to engage in delinquent behavior in the workplace (Lee et al., 2005; Marcus, Lee, & Ashton, 2007). Several studies have been carried out on personality differences using the HEXACO model to predict risk-taking (Vries et al., 2009; Weller & Tikir, 2011), other studies have used the HEXACO model to predict workplace delinquency and integrity (Lee et al., 2005). Research has shown strong association between low levels of H-H and criminal behavior, unethical behavior, materialism, and power-seeking behavior (Ashton & Lee, 2008a, 2008b). However, as noted previously, research has not examined the influence of the H-H personality trait on safety-related behavior in the workplace.

A study carried out by Marcus et al. (2007) compared the use of the FFM and the HEXACO personality model in testing the associations between personality-based and overt integrity tests with work-related counterproductive work behavior (CWB) and counterproductive academic behavior (CAB). The sample size of 853 participants consisted of current employees and students. The participants were required to complete a 96-item HEXACO personality inventory (HEXACO-PI) test to measure the six HEXACO personality dimensions. The participants also completed an integrity inventory measure which consisted of a 60-item overt integrity test and a 55-item personality-based test. Marcus et al. (2007) described overt integrity test items as direct and transparent questions that are aimed at assessing counterproductive behavior. An example of an

overt item is "Have you ever thought of stealing money from your workplace without doing it in reality"(Marcus et al., 2007, p. 6). Personality-based integrity tests however, refer to items that are adopted from the traditional personality inventory and whose criterion are not very obvious such as "I am more sensible than adventurous" (Marcus et al., 2007, p. 6). Besides the honesty-humility (H-H) part of the HEXACO-PI, the responses from the remaining five personality traits were approximated for the FFM personality factors based on their similarity. The results showed that the FFM provided more criterion-related validity of personality-based integrity tests while the H-H dimension was more valid for overt integrity tests (Marcus et al., 2007). These findings about the H-H personality trait are particularly relevant to this current research as it seeks to investigate the extent to which individuals in high-risk industries are motivated to actively participate in safety-related workplace behaviors. The finding of the study further supports the importance of the H-H factor in addition to the FFM personality dimensions in obtaining a broader explanation of the association between personality and safe work behaviors when carrying out integrity based-tests.

Research into human psychology has attributed various risk-taking behaviors to individual personality differences. Some of these risk-taking behaviors have been tied to the tendency to engage in physical health risks such as smoking, excessive drinking, drunk driving, consumption of alcohol/drugs, and sexual risk-taking (Trobst et al., 2000; Vollrath & Torgersen, 2002). Vollrath & Togersten (2002) compared eight personality types to predict their likelihood of engaging in a range of risky health behaviors. The eight personality types being measured were; spectator, insecure, sceptic, brooder, hedonist, impulsive, entrepreneur and complicated. Each of these personality types were determined based on varying levels of the extraversion, neuroticism and conscientiousness personality dimensions in the FFM. Six hundred and eighty-three Swiss students

were asked to complete a 60-item NEO five factor inventory (NEO FFI) scale (Marcus et al., 2007; McCrae et al., 1998) to measure the three personality dimensions from the FFM. Each of the participants were then assigned to one of the eight personality types. The participants' propensity for risky health behaviors were measured using direct questions to determine their smoking habits, alcohol consumption levels, drunk driving, drug consumption and risky sexual behavior. The results of the ANOVA tests revealed that individuals who were low in conscientiousness and high in extraversion and neuroticism were more likely to take health risks. Likewise, individuals who were high in neuroticism, and low in extraversion and conscientiousness were susceptible to risky behavior. High conscientiousness was a major factor that prevented persons who were extroverted and neurotic from engaging in risky health behavior. This study however was based on the FFM and therefore does not consider the influence of integrity-based personality traits in predicting risky health behavior.

Ibelieve that individuals with a propensity to engage in risky health behaviors are less likely to act safely in the workplace, while individuals who do not take health risks are more likely to act safely in the workplace. Numerous studies on personality traits have shown that trait conscientiousness is a critical determinant of safe behavior (Beus et al., 2015; Taubman - Ben-Ari & Yehiel, 2012; Wallace, 2003), job performance (Salgado, 1997), job satisfaction (Furnham, 2009), risk-taking (Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005; Trobst et al., 2000; Vollrath & Torgersen, 2002; Weller & Tikir, 2011), and accident involvement(Arthur Jr. Winfred and Graziano, 1996; Kotze & Steyn, 2013) in the workplace.

Weller & Tikir (2011) studied the likelihood of individuals to take risks across four specific risk domains (social, recreational, health/safety and ethical) using the HEXACO personality structure. Two hundred and thirty-one undergraduate students were asked to complete a 192-item

HEXACO-PI to measure the six personality dimensions and a revised domain specific risk taking (DOSPERT-R) scale which was modified to measure individuals' risk taking, risk perception and the perceived benefits of risky behavior across the four specific risk domains. Correlation analysis showed that H-H was strongly associated with the health/safety domain of risk taking (-.44), risk perception (.33) and perceived benefits (-.25). H-H was also strongly associated with the ethical domain of Risk Taking (-.57), risk perception (.31) and perceived benefits (-.46). Openness to experience was positively associated with the social and recreational domains of risk taking (.37 and .23 respectively).

Emotionality and conscientiousness were negatively associated with risk taking across all four domains; (-.16, -.35, -.27, -.24) and (-.16, -.19, -.34, -.32) respectively, while extraversion had no significant association with any of the domains. Furthermore, agreeableness was negatively associated with the health/safety and ethical domains of risk taking (-.20 and -.26) but not significantly associated with risk perception and perceived benefits across all four domains. Emotionality was positively associated with risk perception across all the four domains; (.21, .30, .44, and .29) but had no significant association with perceived benefit across all the domains.

Extraversion and agreeableness were not significantly associated with perceived risk and risk benefit across all domains. Although, openness was associated with perceived benefits in the social (.37) and recreational (.27) domains, it was not associated with risk perception in any of the domains. Conscientiousness was however weakly associated with both risk perception and perceived benefits across all domains. The associations found between the HEXACO personality factors and risk-taking in the health/safety domain suggests that personality differences will influence safety motivation in the workplace. The results of Weller and Tikir (2011) also showed that a stronger relationship exists between individual attitudes towards health and safety and the

HEXACO traits of H-H, emotionality and conscientiousness compared with the HEXACO traits of agreeableness, extraversion and openness to experience. In this current research, our focus on the personality dimensions will be restricted to the H-H, emotionality and conscientiousness factors of the HEXACO. I believe that these three personality traits will show clearer effects in the personality-safety motivation relationship (Weller & Tikir, 2011) when safety incentives are present.

John Mowen (2000) developed a meta-theoretic model of personality and motivation by integrating elements of control theory, hierarchical personality model, evolutionary psychology and the FFM of personality. The 3M model identifies four levels of trait based on the hierarchical model which are 1) elemental traits, 2) compound traits, 3) situational traits and 4) surface traits. The model describes eight elemental traits which form the foundation of individual personality differences which may arise from genetics and from a person's early learning history and are derived from a combination of the five personality traits in the FFM, two personality traits from evolutionary psychology (material needs and physical needs) and an eighth trait which is the need for arousal. The model further describes compound traits like task orientation and the need for learning which emerge from an interplay of elemental traits which combine to present traits that are different from their component elements. Situational traits such as health motivation and buying impulsiveness are described as traits that result from the combined effects of elemental and compound traits as well as an individual's previous learning history and the situational context. The fourth trait in the hierarchy is the surface trait which results from an interaction of the other three traits such as the tendency to consume a healthy diet. Although, Mowen's 3M model of personality and motivation was originally applied to explain how consumer behavior is motivated by personality differences, it however provides some theoretical evidence of the association that

exists between personality differences and individual motivation. This current study will add to the existing body of knowledge on the personality-safety motivation relationship in predicting the inclination of workers to participate in behavioral safety programs.

Teo & Ling (2009) suggested that the personality of workers in an organization plays an important role in determining what motivates them. In organizations where the senior management displays a strong commitment to safety, workers who have negative attitudes to safety will have low levels of safety motivation. Personality characteristics will most likely influence the extent to which an individual will be intrinsically motivated to behave safely particularly when there are no tangible or instrumental factors available to increase safety motivation. While some people have an innate disposition to behave safely, I believe that the presence of some form of incentive is likely to be effective in increasing safety motivation of individuals irrespective of their personality type. However, while some people are intrinsically motivated to behave safely, others are naturally disposed to take risks or attach minimal value to safety and therefore need to be externally motivated to embrace safe behavior in the workplace.

Research by Teo & Ling (2009) showed that the supervisor-worker relationship is very instrumental in enhancing safety motivation of workers. A supervisor who displays a positive attitude to safety is able to increase the safety motivation of the subordinate. Also, research has shown that the management's commitment to safety is the foremost factor in enhancing safety motivation and performance of workers. An organization that is committed to the safety of its workers is more likely to develop safety programs and incentives that are targeted at increasing safety motivation of its workers (Teo & Ling, 2009; Krause, 1998; Sulzer-Azaroff, 1999; Geller, 1997).

According to Parks & Guay (2009), personality has a strong association with various work outcomes such as performance, motivation, leadership, and job satisfaction. The personality of individuals shapes their values which serve as the principles that guide their actions and behavior. Values are mostly developed through an individual's social interaction, cultural background and introspections on personal experiences which are often impacted by individual personality traits and innate dispositions. Trait conscientiousness and neuroticism of the FFM have been shown to be consistently related to motivation across various theories of motivation while the other FFM traits have shown weaker and less consistent associations with motivation. Parks & Guay (2009) made several propositions regarding how personality and values may impact motivation to pursue and accomplish goals in which they proposed that the traits conscientiousness and emotional stability are predictors of an individual's motivation to pursue set goals. Iconsider the fact that the proposition by Parks & Guay (2009) was made using the FFM personality model which does not sufficiently capture all the possible personality traits. Based on previous research linking personality and safe behaviors (Parks & Guay, 2009; Arthur & Graziano, 1996, Weller & Tikir, 2011; Vollrath & Togersten, 2002), I believe that the traits H-H, conscientiousness and emotionality of the HEXACO will show more consistent associations with safety motivation. Iexpect that these three personality traits will show clearer effects in the personality-safety motivation relationship when safety incentives are present. I also expect that the H-H personality trait will provide an additional perspective to the relationship between personality and motivation in the realm of safety since this trait has not previously been examined in the context of workplace safety.

Chapter 3: Hypotheses Development

Personality and Safety Motivation

Honesty-humility (H-H). One major gap my study aims to fill is to investigate the role of the H-H trait in predicting safety participation in behavioral safety programs. People who are low in H-H will try to find ways to exploit situations to get ahead of others. Low H-H people are less likely to be intrinsically motivated to behave safely due to their innate need to gain undue advantage over others and are therefore less likely to possess high levels of safety motivation. Such individuals are more likely to engage in health/safety risks and unethical behavior (Weller & Tikir, 2011) and are less likely to participate in safety programs and comply with safety rules unless it serves their personal interests. According to Ashton & Lee (2008), the H-H factor requires special consideration due to the potential risk that individuals with low levels of H-H pose to workers' health and safety as a result of their propensity to engage in counter-productive acts and unsafe behavior. On the other hand, I believe that high H-H people are sincere, fair and are more likely to be intrinsically motivated to participate in safe workplace behaviors. I expect that when safety incentives are being offered to motivate safe behavior, low H-H personalities will be more motivated to participate in safety programs than when no incentives are being offered. I however predict that:

H1A: Honesty-Humility will be positively associated with safety motivation in the Workplace

Conscientiousness. Conscientiousness is generally associated with terms like organized, hard-working, efficient and careful. Individuals who are high in conscientiousness are more likely to carefully consider the risks and implications associated with engaging in at-risk behavior,

whereas individuals who are low in conscientiousness tend to be sloppy, absent-minded and reckless. Low conscientiousness people are more likely to have low levels of safety motivation which makes them less likely to participate in safety programs (Weller & Tikir, 2011). I predict that individuals who are high in conscientiousness are less likely to be involved in at-risk behavior, while individuals who are low in conscientiousness are more likely to engage in unsafe behaviors that compromise safety in the workplace.

H1B: Conscientiousness will be positively associated with safety motivation in the workplace

Emotionality. The HEXACO Emotionality dimension is associated with anxiety traits and heightened risk perception (Weller & Tikir, 2011). According to Lee, Ogunfowora, et al. (2005), HEXACO emotionality is associated with less risk-taking and high risk-aversion which makes them less likely to engage in at-risk behavior or intentional acts of defiance to established rules. Individuals who are high in emotionality are less likely to engage in unsafe/risky behavior for fear of repercussions. I believe that individuals who are high in emotionality are likely to possess an innate disposition to behave safely and therefore will have high levels of safety motivation. On the other hand, individuals who are low in emotionality have a higher tendency to take risks, disobey safety rules or display less regard for repercussions.

H1C: Emotionality will be positively associated with safety motivation in the workplace

Incentives as a Moderator between Personality and Safety Motivation

Safety incentives are systems that an organization has in place to motivate workers to work safely on the work site (Teo & Ling, 2009). The use of safety incentives in increasing safety

motivation of workers has been used strategically by organizations to improve workplace safety and thereby reduce costs associated with workplace accidents (Maslen & Hopkins, 2014; Teo & Ling, 2009). Previous studies of human psychology have resulted in various theories of motivation which may be used to explain the success of this approach (Ford & Tetrick, 2008; McSweeney, McSweeney, & Swindell, 1999). McSweeney (1999) described motivation as a behavior that is "energetic and goal directed" (p. 437), and which when consistently reinforced may become habit. Safety motivation is a reflection of the willingness of an individual to behave safely. Individuals are motivated to enact safe behaviors in the workplace for reasons which may differ from person to person.

Self-determination theory. Research into self-determination theory (SDT) carried out by Ryan & Deci (2000) presented intrinsic and extrinsic motivation on a self-determination continuum with amotivation at one extreme end of the spectrum, extrinsic motivation at the midrange and intrinsic motivation at the other extreme. On this continuum, behaviors are described as being motivated by three major factors which are: 1) Regulatory styles, 2) Perceived Locus of Causality and, 3) Relevant regulatory processes.

Regulatory styles: on this branch of the SDT continuum, amotivation is influenced by the absence of regulation on one end and intrinsic regulation at the other end. At the mid-range, extrinsic motivation is influenced by various regulations such as external, introjected, identified and integrated regulations while intrinsic motivation is influenced by intrinsic regulation;

Perceived locus of causality: on this branch of the SDT continuum, the various levels of motivation are influenced by varying levels of self-cognition which may be impersonal, externally or internally modified;

Relevant regulatory processes: This branch of the spectrum identifies amotivation, extrinsic motivation and intrinsic motivation as being influenced by various factors which range from a complete lack of control/intention/competence on the amotivation end of the spectrum. Extrinsic motivation is however influenced in varying levels by factors such as external/internal rewards/punishment, personal importance and self-awareness. Intrinsic motivation on the other extreme is influenced by interest, enjoyment and inherent satisfaction.

Fleming (2012) further classified intrinsic and extrinsic motivation under the SDT spectrum into controlled safety motivation and autonomous safety motivation. Controlled safety motivation comprises of external and introjected safety motivation while autonomous safety motivation comprises of identified and intrinsic safety motivation. External safety motivation is enhanced by positive or negative consequences of safety behavior while interjected safety motivation is influenced by feelings of guilt, shame and self-worth that are dependent on safety behavior. On the other hand, identified safety motivation is borne out of an understanding of the importance and value of safety behavior while intrinsic safety motivation is enhanced by an innate interest and enjoyment derived from behaving safely. Various studies have shown that a significant relationship exists between personality differences and motivation levels of individuals (John Mowen, 2000, Teo & Ling, 2009; Parks & Guay, 2009), however the SDT sheds more light on the various levels of motivation which is relevant to this current study. In this study, SDT provides a measure for the variants of safety motivation as it relates to different personality traits when safety incentives are present.

Safe behaviors may be motivated in individuals by internal or external regulatory processes. Safe behaviors are externally regulated through the use of tangible incentives such as monetary rewards and intangible incentives such as verbal praise and recognition (Ford & Tetrick,

2008). Most behavioral safety interventions seek to reinforce safe work behaviors by providing some kind of incentives to workers. Incentives may be in the form of monetary rewards, recognition and/or small gift items such as plaques, mugs or t-shirts and umbrellas (Geller, 1997). Some corporations organize safety celebrations after a specified number of days or weeks without injury where they present awards to "safety ambassadors". Some studies have shown that incentives should be an essential aspect of any effective behavioral safety program (Geller, 1997; Sulzer-Azaroff, 1999).

Incentives help to motivate workers to embrace safety to a large extent, however other studies have shown that incentives may also lead to dishonest practices such as non-reporting of incidents (Krause, 1998; Tuncel et al., 2006). Krause (1998) argues that relying on incentives as a motivation for workers' participation in safety efforts rather than appealing to their intelligence does not only insult their intelligence, it also results in a cycle of a "what's in it for me" mentality towards safety that is difficult to break. Although several studies have shown that safety incentives predict lower injury rates, there is insufficient empirical data to determine its effectiveness (Krause, 1998).

Types of incentives. Extensive research has been carried out to investigate the effectiveness of safety incentives in motivating safe behavior. Most of these studies have claimed that safety incentives are effective in improving safety (Haines Iii et al., 2001; Maslen & Hopkins, 2014; Sulzer-Azaroff, 1999). According to Haines et al. (2001), safety incentives, though effective, do not always produce the desired effect. Various industries motivate their workers using a combination of various kinds of safety incentives. These safety incentives can be broadly categorized into three groups: 1) tangible incentives which includes monetary rewards, gift awards and vacation vouchers; 2) intangible incentives which includes recognition, feedback, goal-setting

and organizational safety climate and 3) disincentive programs which includes penalties and punishment.

Several studies on safety incentives have shown that intangible incentives are often used hand-in-hand with tangible incentives (Austin et al., 1996; Laitinen & Ruohomäki, 1996; Haines Iii et al., 2001; Sulzer-Azaroff, 1999; Maslen & Hopkins, 2014). Most effective safety motivation approaches have combined tangible incentives like cash awards and gifts with intangible incentives like verbal praise, feedback, recognition and goal setting to encourage safety participation of workers (Austin et al., 1996; Laitinen & Ruohomäki, 1996). Itherefore consider the influence of intangible incentives as being more strongly embedded in the presence of tangible incentives. The trait-activation theory (Tett & Burnet, 2003) is a theory that seeks to understand how individual traits are expressed in relevant workplace situations that create an enabling environment for certain personality traits to be displayed. Trait-relevant situational cues will facilitate the expression of behaviors consistent with certain traits (Tett & Burnet, 2003).

According to Tett and Burnett (2003, p. 510), "motivation will increase when trait expression opportunities are increased and will increase further when that expression is tied to desired extrinsic outcomes". A combination of situational strength and personality differences influences the value that people place on extrinsic rewards and this justifies the moderator effect that incentives will have on the safety motivation of individuals in the workplace as it relates to this current study. For instance, low H-H people tend to be greedy and have a strong inclination towards materialism (Ashton et al., 2013), such people are therefore more likely to be more positively motivated by tangible incentives. Highly conscientious people on the other hand are intrinsically hard-working and diligent (Ashton et al., 2013) and may attach less value to tangible incentives. I believe that understanding the extent to which individuals with different personality

traits are motivated to behave safely by the inclusion of tangible incentives or disincentives is an important contribution to research on workplace safety which is what this study aims to achieve.

Tangible Incentives. Several studies have assessed the effectiveness of tangible incentives such as cash rewards and other gift items in safety motivation (Austin, Kessler, Riccobono, & Bailey, 1996; Saracino et al., 2015; Teo & Ling, 2009). These kinds of safety motivations depend on external factors because workers are motivated to act safely solely for instrumental reasons rather than for the sake of doing the right thing (Ford & Tetrick, 2008). Although, external incentives have been known to result in improved safety behavior, studies have shown that it is ineffective in promoting safety in the long-term especially once the incentives are withdrawn. According to Teo and Ling (2009), incentives are a way of rewarding non-violators of safety in order to motivate their continual efforts. However, monetary incentives for safe work practice are not always easy to implement as there may sometimes be conflict between its use to motivate safe behavior and increased productivity which may be counterproductive to safety motivation (Ford & Tetrick, 2008; Teo & Ling, 2009). Numerous researchers have however suggested that the benefits of monetary incentives can only be achieved when incentives are appropriately administered (Geller, 1996; Goodrum & Gangwar, 2004; Krause, 1998; Maslen & Hopkins, 2014; Teo & Ling, 2009). For instance, if certain safe behaviors are linked to injury reduction, such that incentives are awarded for reduced number of reported injuries, rather than achieving the goal of injury avoidance it is more likely to result in under-reporting or non-reporting of incidents in order to obtain rewards (Geller, 1996; Haines Iii et al., 2001; Lipscomb et al., 2013; Probst et al., 2013; Teo & Ling, 2009).

Maslen (2014) carried out case studies into the incentive structures of eleven multinational companies to investigate the impact of incentives schemes in motivating the daily decisions of

senior managers towards reducing accident risk in the workplace. Observations and interviews of over forty stakeholders revealed that even though large sums of money were being allocated towards safety incentives, most senior managers were more particular about getting high performance evaluation ratings for career advancement than getting the financial bonuses being provided as incentives. Differences in monetary incentives provided for individual safety performance often resulted in a perception of unfairness among workers who felt that the financial benefit they obtained was worthless compared to their less hardworking co-workers who got almost the same benefit despite putting less effort into safety. There was also the issue of some senior managers whose drive for incentives clouded their judgment and caused them to make high-risk decisions which may be beneficial in the short-term but had negative implications on safety in the long run.

The study ultimately showed that although incentives were effective in improving safety outcomes, when not properly administered it could also result in unintended consequences such as under-reporting severity of incidents and increased numbers of spurious reports in cases where incident reports were incentivized. The study concluded that even though people claim that safety is a value that need not be driven by incentives, the awarding of incentives was generally viewed more as a recognition that their efforts were valued. Despite the potential downfalls of using incentives to increase workers' safety motivation, numerous studies (Krause, 1998; Ford & Tetrick, 2008; Maslen & Hopkins, 2014) have found that incentives are effective in reducing workplace injuries and lead to improved safety outcomes. Moreover, safety motivation has been found to be significantly enhanced by the availability of material rewards (Ford & Tetrick, 2008; Maslen & Hopkins, 2014; Probst et al., 2013; Saracino et al., 2015; Teo & Ling, 2009). I therefore suggest that safety incentives will have a direct effect on safety motivation that is entirely

independent of the personality differences. However, considering the role of safety incentives in enhancing safety motivation, I believe that the presence of safety incentives will strengthen the effect of safety motivation. Safety incentives will therefore play a moderator role on the relationship between personality and safety motivation. I predict that tangible incentives such as cash rewards, prizes and other material incentives will moderate the relationship between personality traits and safety motivation.

***Intangible Incentives*.** Some types of intangible incentives include recognition and verbal praise (Maslen & Hopkins, 2014), feedback (Austin et al., 1996) and goal-setting (Laitinen & Ruohomäki, 1996). Some naturally occurring consequences of safety behavior may include health and safety outcomes, increased or reduced production speed, comfort or discomfort of safety-related equipment and co-workers' reactions and acceptance (Ford & Tetrick, 2008). The most effective incentives are those whose consequences occur immediately after a behavior. For an intangible incentive to be effective, workers should be well informed about the behaviors that represent exposure to risk or injury on the work site (Krause, 1998).

Haines (2001) carried out a study of 329 participants to test the relationship between reactions to safety incentives in general and various individual and group level factors such as locus of safety, leader-member exchange, perceived organizational support, group cohesiveness, safety norms, and task interdependence. The study showed that positive leader-member relationships result in more positive reactions to safety incentives. More so, the leader-member relationship showed a significant association with perceived organizational support which in turn results in a positive reaction to incentive programs. The study did not find any significant relationship between locus of control and reaction to safety incentives. The study effectively identified various situational factors that facilitate positive reactions to incentives which ultimately

determines the effectiveness of safety incentives in motivating safe behavior. The study did not however evaluate the role of person-based factors like personality differences in the reactions of workers to safety incentives.

In an experiment which was carried out by Laitiken and Ruohomaki (1996) on Finish construction sites, a new method for weekly safety inspections and eight safety rules were developed for two different sites. Information meetings were organized for all workers at the start of the interventions to explain the observation method and feedback as well as the target safety goals and the workers were promised coffee and cake for attaining the set goal for safety index. With the participation of the supervisors and workers, information meetings, goal setting, coffee and cake reward and the frequent and consistent provision of graphic feedback, progressive significant improvements in the safety index on both sites were observed. The safety index for site 1 rose from a baseline of 60% to 89% during feedback and in site 2 it rose from 67% to 91%. This study points out the effectiveness of a combination of tangible incentives and intangible incentives on the safety motivation of workers. The result of this study suggests that tangible incentives when properly administered along with intangible incentives like feedback, goal-setting and recognition may be much more effective than solely awarding tangible incentives.

Al-Hemoud and Al-Asfoor (2006) conducted an experiment at a research institution to demonstrate the effectiveness of a well-designed behavior based-safety process. The experiment introduced a behavior-based safety process for the first treatment group which consisted of 11 workers and the second group of 10 workers served as the control group. The experimental group were trained for three days after which they were provided with one-on-one feedback on their safety-performance behavior three times daily while the control group continued to work without any intervention. After six weeks of continuous feedback intervention, the target behaviors

increased from a 74% baseline to 100% withdrawal phase. The intervention was then withdrawn for 3 months immediately following the intervention phase. The t-test conducted on the control group showed no significant change from the baseline to the feedback phase, while the experimental group showed a significant increase in the mean percent safe score across target behaviors ($t=4.38$, $p<.05$). The findings from the experiment suggested that behavior based safety initiatives that are based on feedback techniques are effective in improving and sustaining safe work behaviors even after reinforcement was discontinued. Some effective safety motivation approaches have combined tangible incentives like cash awards and gifts with intangible incentives like verbal praise, feedback, recognition and goal setting to encourage safety participation of workers (Austin et al., 1996; Laitinen & Ruohomäki, 1996). Ihowever predict that intangible incentives will have a moderating effect on the relationship between personality and motivation.

Honesty-humility. According to Ashton et al. (2008), low H-H people are more likely to be associated with workplace delinquency and counterproductive behaviors which is also likely to reflect in their negative attitude towards safety in the workplace. Also, low H-H people tend to be materialistic and have a strong drive for financial gain (Ashton et al., 2013; Lee et al., 2014), such people are therefore likely to have increased levels of safety motivation when tangible incentives are provided. The self-determination theory (Ryan & Deci, 2000; Fleming, 2012) illustrates various levels of motivation as ranging from extrinsic motivation wherein individuals are mostly motivated by external factors to intrinsic motivation which is borne out of an innate passion or love for something irrespective of external influences. I believe that it is important to understand the extent to which workers may be motivated by safety incentives which is what this study aims to assess. I therefore predict that the safety motivation levels of low H-H people are

likely to be increased by tangible incentives due to their desire for financial gain and fame. On the other hand, I believe that high H-H people are likely to value intangible incentives like positive feedback and recognition.

H2A: Tangible incentives will moderate the relationship between H-H and safety motivation, such that the positive relationship between H-H and motivation will be stronger when tangible incentives are offered

H3A: Intangible incentives will moderate the relationship between H-H and safety motivation, such that the positive relationship between H-H and motivation will be stronger when intangible incentives are offered

Conscientiousness. People who are conscientious have been described with adjectives such as organized, careful and efficient (Ashton et al., 2013). On the other hand, people who are low in conscientiousness are impulsive, prone to anger, undisciplined (Ashton et al., 2013) and such people are prone to unsafe behaviors (Seibokaite & Endriulaitiene, 2012; Ashton et al., 2013). People are generally motivated by extrinsic rewards, however different personality traits attach different levels of importance to different incentive types (Tett & Burnett, 2003). I predict that highly conscientious people are likely to attach more value to intangible incentives and less value to tangible rewards because they are intrinsically diligent and will exhibit high levels of job performance by default (Tett & Burnett, 2003; Ashton et al., 2013). Low conscientiousness people are not intrinsically motivated to exceed expectations due to their sloppy and undisciplined nature, I however predict that low conscientiousness people may be more motivated to perform safety obligations if some form of extrinsic reward is provided.

H2B: Tangible Incentives will moderate the relationship between conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when tangible incentives are offered

H3B: Intangible Incentives will moderate the relationship between conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when intangible incentives are offered

Emotionality. Emotionality dimension of the HEXACO model is linked with attributes of fearfulness, anxiety and over-sensitivity while people who are low in emotionality are brave and self-assured (Ashton et al., 2013). According to Ashton et al. (2013), a personality characterized by greed (low H-H) and lack of fear (low emotionality) is a strong predictor of an individual's likelihood of engaging in unsafe behaviors that may cause injury or death to themselves and others. People who are high in emotionality are likely to be more intrinsically motivated to behave safely whether or not incentives are being offered for safe behavior. On the other hand, people who are low in emotionality are more likely to engage in risky or unsafe behaviors due to their lack of fear (Weller & Tikir, 2011), such people are likely be motivated to behave safely when tangible incentives are offered. Tett & Burnett (2003) suggested that certain situations may act as releasers for different personality traits. These trait-activators may be on the task-level, social level or organizational level. An organization that values safety and provides tangible incentives for safe behavior, is likely to provide an enabling environment for workers to exhibit higher levels of commitment to safety generally (Geller, 1996; Christian et al., 2009; Saracino et al., 2015). People who are high in emotionality are vulnerable (Ashton et al., 2003) and are more likely to be easily

influenced by the social and organization culture towards safety in the workplace on an emotional level. Low emotionality people are less sentimental and are less likely to be influenced by social norms (Weller & Tikir, 2011). I however predict that the safety motivation of low emotionality people is more likely to be increased when extrinsic rewards are offered than when there are no incentives offered.

H2C: Tangible incentives will moderate the relationship between emotionality and safety motivation, such that the positive relationship between emotionality and motivation will be stronger when tangible incentives are offered

H3C: Intangible incentives will moderate the relationship between emotionality and safety motivation, such that the positive relationship between emotionality and motivation will be stronger when intangible incentives are offered

Disincentives. Disincentives are negative consequences or punitive measures that are associated with violations of safe procedures or policies. They are usually aimed at reinforcing safe behavior to prevent injuries. The use of punitive measures to enforce safe behavior is a purely extrinsic approach to safety motivation that encourages safe behavior for instrumental reasons rather than for the sake of doing the right thing (Geller, 1996; Saracino et al., 2015). Disincentives refer to the use of negative consequences to deter workers from violating safety rules on the work site. The disincentives that are most commonly used in industries include the imposition of monetary fines and other disciplinary actions like suspension from work, or demotion. While several studies have pointed out disincentives as a traditional form of safety management (Krause, 1998; Teo & Ling, 2009), most of these studies advocate against the use of this approach towards

safety due to its ineffectiveness in sustaining an intrinsically motivated safety culture. For this reason, behavioral safety incentive programs tend to emphasize the use of positive reinforcement i.e. anything that encourages a re-occurrence of the desired behavior (Goodrum & Gangwar, 2004). Studies on the use of disincentives have proven its effectiveness as a negative reinforcement in discouraging unsafe behavior among workers. However, these studies have also shown that the use of disincentives has led workers to cover up accidents and hazards for fear of repercussions (Lipscomb et al., 2013; Teo & Ling, 2009) thereby undermining overall safety outcomes.

Teo and Ling (2014) studied the effect of personnel characteristics and safety incentives on safety performance in construction sites by comparing safety performance in safe and unsafe sites. Four hundred and twenty questionnaires were randomly distributed to contractors registered under a construction authority out of which 60 responses were completed. The participants were a combination of upper management, middle management, safety personnel and technical staff. The questionnaires were designed to measure site safety levels, personnel characteristics and incentives. The results of this study showed that the influence of management commitment and safety culture were critical components in sites that recorded high safety records. The results also showed that the use of disincentives in some sites, such as imposing monetary fines and suspension of violators, resulted in lower safety levels on those sites. However, the research did not analyze the role of personality differences in the effectiveness of safety disincentives on safety performance. More importantly, this study will provide more insight on the effectiveness of safety incentives in promoting or diminishing the integrity of individual participation in safety programs in the workplace.

Honesty-humility. Low H-H people are described as having a high sense of self-aggrandizement and entitlement that makes them feel that they deserve to have power over others

(Lee & Ashton, 2005; Ashton et al., 2008; Lee et al., 2013). Such people are likely to go out of their way to cut corners and sneakily engage in counter-productive workplace behaviors in defiance (Lee et al., 2005) against fines and other forms of punishment being levelled to motivate safe workplace behaviors in order to maintain their own sense of control. Studies have shown that the use of disincentives may result in under-reporting of incidents and other behaviors that may have a negative effect on safety outcomes in the long run (Lipscomb et al., 2013; Teo & Ling, 2009). I believe that people who are low in H-H will likely lie or cheat to avoid a safety disincentive rather than change their behavior. On the other hand, high H-H people are likely to always be positively motivated to follow rules whether or not disincentives are present. I therefore predict that:

H4A: Disincentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and safety motivation will be stronger when a disincentive is offered

Conscientiousness. Highly conscientious people are diligent and are inclined to be habitual sticklers for rules and procedures (Seibokaite & Endriulaitiene, 2012; Ashton et al., 2013). Such people would avoid engaging in any risky or unsafe behaviors (Weller & Tikir, 2011) that will bring them to disrepute and are therefore likely to be positively motivated by disincentives. On the other hand, low conscientiousness people tend to be sloppy, absent-minded and reckless (Ashton et al., 2008). According to Ashton et al. (2008), people with low levels of conscientiousness are prone to workplace delinquencies and counterproductive behaviors. I however predict that such people may be deterred from unsafe behaviors when disincentives are applied.

H4B: Disincentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when a disincentive is offered

Emotionality. Trait emotionality refers to the attribute of being emotional and vulnerable (Ashton, 2008). People who are high in Emotionality tend to be fearful and avoid any behavior that will have undesirable repercussions (Ashton et al., 2008; Weller & Tikir, 2011; Lee et al., 2013). Such people have high levels of safety motivation and will likely steer clear of any behavior that will result in punishment (Weller & Tikir, 2011). I believe that when disincentives are being offered to mitigate unsafe behavior, people who are high in emotionality are likely to be more motivated to behave safely due to their high aversion to repercussions. Low emotionality people are however less likely to be motivated by disincentives due to their lack of fear. I therefore predict that:

H4C: Disincentives will moderate the relationship between trait emotionality and safety motivation, such that the positive relationship between emotionality and motivation will be stronger when a disincentive is offered

Motivation and safety participation

In this study, I refer to safety participation as safety citizenship behaviors which are voluntary actions that help to improve safety. They are behaviors that mirror organizational citizenship behaviors (OCB) and contribute to the safety of all members of the organization. Hoffman (2003) suggested similarities between organizational citizenship behaviors (OCB) and safety citizenship behavior except that safety citizenship behaviors are focused on improving

organizational safety. According to Hoffman et al. (2003), just as leader-member exchange (LMX) relationships are important predictors of OCB, safety citizenship behavior is strongly associated with leader-member relationships in the workplace. Relational factors such as LMX and relationships among co-workers are strong motivators for safe behaviors and safety participation of workers (Hoffman et al. (2003). Safety citizenship may be displayed by actions such as caring for the safety of co-workers, safety related helping, making recommendations for safety, blowing the whistle on co-workers who do not follow safety procedures, keeping informed about safety policies and initiating safety-related change (Hoffman et al., 2003). In this study, I suggest that safety citizenship behaviors are synonymous with safety participation. Hence, I anticipate that safety motivation will be strongly and positively associated with safety participation.

Ford & Tetrick (2008) define safety performance as "a subset of overall job performance" (p.1473). According to Christian et al. (2008), safety performance may be viewed as two different concepts. It is sometimes viewed in terms metric values of safety outcomes and at other times it is referred to as a metric for safe behaviors of individuals (Christian et al., 2009). In this study, I refer to safety performance as behaviors that are exhibited by individuals to promote workplace health and safety. Safety compliance and safety participation are considered to be sub-components of safety performance (Christian et al., 2009; Ford & Tetrick, 2008). Safety compliance normally refers to obeying a set of safety rules that are generally mandatory, while safety participation refers to safe behaviors that are mostly voluntary (DerArmond et al., 2011; Christian et al., 2009). Neal and Griffin (2006) posited that safety climate and personality are antecedents of safety motivation and safety knowledge influences safety performance behavior which in turn determine safety outcomes.

As described previously, the integrative model of workplace safety developed by Christian et al. (2009) depicts that distal situation-related factors (safety climate and leadership) and distal person-related factors (personality characteristics and job attitudes) are antecedents of proximal person-related factors (safety motivation and safety knowledge). Safety knowledge and safety motivation are predictors of safety performance (safety compliance and safety participation) and safety performance determines safety outcomes (accidents and injuries). Ninety existing studies on workplace safety met the criteria for inclusion in Christian et al.'s (2009) meta-analysis and 477 effect sizes were utilized in analyzing the predictor-criterion. The predictor variables were then sorted and organized into the various construct categories. Meta-analytic calculations and path analysis were then carried out on the data. The results showed that safety climate has a strong positive association with both safety knowledge and safety motivation. Conscientiousness was found to be positively associated with safety motivation. Both safety knowledge and safety motivation were positively related to each other and to safety performance. Safety performance was in turn related to accidents and injuries. The personality-characteristics concept of Christian et al.'s (2009) meta-analysis used the FFM personality traits of conscientiousness, neuroticism and extraversion which may not adequately capture the optimal range of personality characteristics that influence safety-related behavior.

Moreover, the study only provides a superficial discussion of safety motivation as an antecedent of safety participation. This current study seeks to bridge this gap by using the self-determination theory to assess the extent to which safety motivation translates into safety participation of workers in the workplace. The use of the HEXACO personality model in this study captures a broader range of the various possible personality traits that may influence safety motivation. I also delve more deeply into the concept of self-determined safety motivation and the

moderating effect of safety incentives in the personality-safety relationship. The nomological model for this current study as shown in Figure 2.2 was adapted from the integrative model of workplace safety (Christian et al., 2009). The nomological model depicts personality characteristics as an antecedent of safety motivation and that safety motivation will in turn be associated with safety participation (Christian et al., 2009; Ford & Tetrick, 2008) when safety incentives are present. In this study, I seek to examine how the HEXACO personality characteristics act as antecedents of safety motivation which has been shown to be strongly associated with safety participation and I predict that the presence of safety incentives will moderate this relationship.

H4: Safety motivation will be positively associated with safety participation.

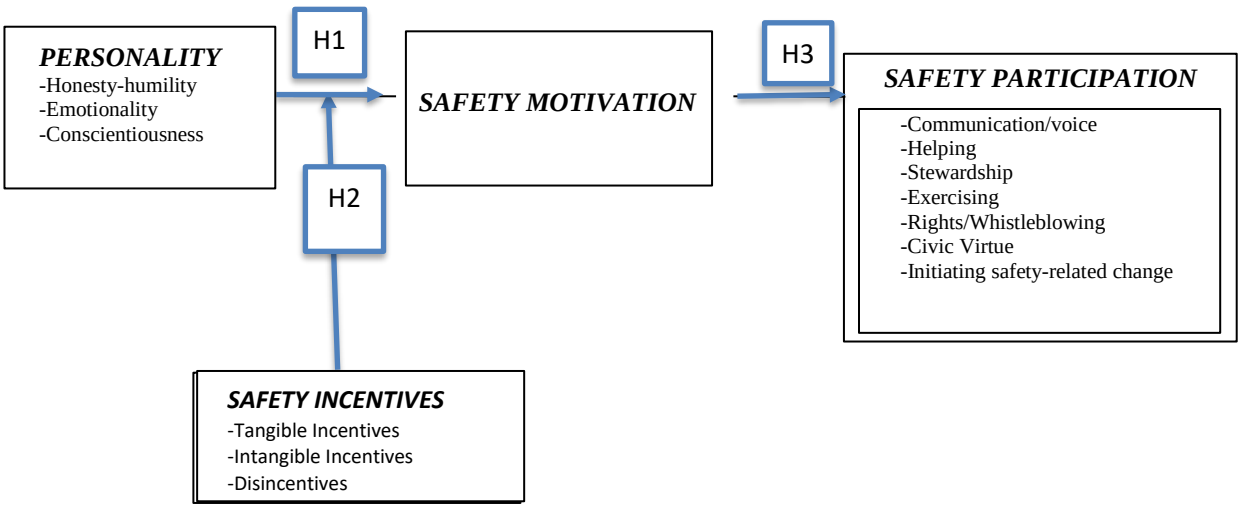

Figure 2.2. Hypothesized model of Safety Participation; Modified from an Integrative model of workplace safety (Christian et al, 2009)

Chapter 4: Methodology

The methodology used in this study incorporated the use of survey questionnaires that were administered to the participants who were recruited online. The survey consisted of validated measures for personality, safety motivation and safety participation. Situational Judgement Tests (SJTs) were also given to each respondent to predict how they would respond when faced with certain situations. The eligibility criteria for participation was that the participant must have been employed in the healthcare industry within the last two years, and in a role that requires that specific safe operating procedures be followed. This criterion was deemed important to this study as participants with experience in high-risk industries are more likely to have sufficient knowledge to accurately respond to the given safety-related situations. This reduced the likelihood of artificial response and increased the observed effects (Aguinis & Bradley, 2014). Other criteria for inclusion were: participants must be aged 18 or over and consent to participation.

Personality dimensions of H-H, conscientiousness and emotionality were measured using the HEXACO scale. Participants were randomized to one of four different scenarios, each scenario represented a different incentive type (tangible incentive, intangible incentive, disincentive, no incentive). Participants were asked to respond to questions about their safety motivation and behavior within the context of the assigned scenario.

Pre-Test

An initial pre-test of the SJTs for this study was conducted to determine the operationalized levels of safety motivation and safety incentives that were developed from the literature. The initial pre-tests were conducted by approaching 12 people known to the researcher. The four different scenarios of the questionnaires were randomly administered to each participant. The preliminary

findings were then used to make necessary adjustments based on informal feedback provided to re-examine the literature and ensure that the SJTs were capturing the theoretical construct of safety motivation as well as how people intuitively perceived safety incentives. Preliminary results suggested that the incentive conditions were capturing the intended constructs. However, some minor adjustments were made to the SJTs to ensure that there was no gender bias in the workplace scenario that was depicted. The adjusted SJTs were then tested in the pilot study. This additional feedback was a test run to ensure that the different incentive scenarios were well randomized across the respondents and had the added benefit of keeping the scenarios as realistic as possible while also ensuring that the survey was effective in measuring the theoretical constructs of personality, safety motivation, safety incentives and safety participation.

Pilot Study: Participants and Procedure

Following the pre-test, a pilot study was conducted to test the incentive manipulations and determine the randomization rate for each scenario, which served as a benchmark in determining the total number of responses required to meet an average minimum of 40 responses targeted for each of the scenarios in the main study. The main criteria for inclusion were; 1) the participant must be an adult (over 18years of age), 2) be resident in the US and 3) must have been employed in the healthcare industry for at least two years. The quota for the pilot study was set at 40 participants who met the criteria in exchange for payment through Amazon.com's Mechanical Turk (Murk). Mturk is an online platform that allows the mass recruitment of a diverse pool of working adults in the US within a short period (Mason & Suri, 2012). Research has shown that participants obtained through Mturk are representative of the US population (Paolacci, Chandler, & Ipeirotis, 2010). Although many participants of Mturk are in India, the participants for this study

were limited to people residing within the US. According to Pontin (2007), Amazon claimed that Mturk has hundreds of thousands of employees representing over ten thousand employers. Mturk also provides the advantage of sampling working adults across a wide range of industries within a short period of time thereby improving the generalizability of the experimental findings. The questionnaire was published on Mturk using Qualtrics research platform. Participants were motivated to participate in the study by offering $1.20 US dollars to each participant on completion of the survey.

Situational Judgement Tests

The use of SJTs in this study was chosen because the goal of the study was to test for moderation effects of safety incentives and to establish causality where an inference between personality differences and safety motivation has been established. SJTs entail carefully crafting a scenario that reflects the construct being tested. The aim was to measure what a respondent would do in a certain situation. The scenario provided the situation and the respondent's selection of a probable behavior provides information about what that person would do if faced with a comparable situation in the future. This enabled the researcher to effectively eliminate competing variables as differences between participants can be directly attributed to the objective value of the given scenario (Aguinis & Bradley, 2014). SJTs are commonly used in behavioral research as they provide a practical and efficient way of getting the experiment out to participants in their natural environment (Aguinis & Bradley, 2014). According to Campion & Ployhart (2013, p. 452), "one advantage of the utilization of SJTs in behavioral research is that it has the ability to measure an individual's behavioral tendencies repeatedly in situations that convey the same psychological meaning."

The use of SJTs in this study aimed at measuring participant's safety-specific behavioral responses to the given scenarios. SJTs are widely used by recruiters to predict a candidate's performance on the job during the selection process. The SJTs that were used in this study are a written version of a situational interview in which the respondents were given a typical work-related scenario which was developed from critical incidents related to a safety-specific job role. The respondents were required to choose from a 5-point Likert-type scale ranging from 1 = very unlikely to 5 = very likely, the response that best represents the individual's most likely course of action under each scenario. In this current study, safety-based SJTs were used to determine what the respondent would do in a certain situation when a type of safety incentive is present. The SJTs attempted to identify how each randomized type of safety incentive -tangible incentive, intangible incentive, disincentive or no incentive- will influence the respondent's safety motivation and result in safety citizenship behavior/participation. The tangible incentive was a 5% bonus for the month. The intangible incentive was public recognition for the employee and supervisor. The disincentive was a 5% pay decrease.

An example of the SJT that was used in this study is as follows:

> *"In a bid to increase employees' safety motivation, ABC Hospital is offering a 5% bonus at the end of the month to members of the crew who have displayed the highest commitment to safety. Today you are partnered with Jordan, a healthcare worker at ABC hospital. You observed that Jordan was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jordan simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action. In this situation, what will you do?"*

1. *Ignore the incident.*
2. *Later in private, call Jordan's attention to the situation.*
3. *Immediately call the situation to Jordan's attention.*
4. *Report the incident to your crew supervisor at the end of the shift.*
5. *Immediately call the situation to the attention of your crew supervisor.*
6. *Immediately call the situation to Jordan's attention AND report it to your crew supervisor.*

Respondents were randomly assigned to one of the four manipulated incentive scenarios by clicking on the link to the survey. After agreeing to the informed consent, respondents were given a short introduction about the purpose of the study after which they were required to answer some criteria-based questions. Respondents who did not meet the criteria were directed to the end of the survey and were not allowed to participate while respondents who met the criteria for inclusion were allowed to proceed with the survey. A flow chart in Appendix A describes the flow of participants through the tests for personality traits, safety motivation and safety participation.

Main Study: **Participants and Procedure**

This study was a survey incorporating a one factor (incentive type) scenario-based experimental design of workplace safety motivation within the healthcare industry. A benchmark of 40 responses per scenario was targeted in the main study based on the rule of thumb of minimum of 20 responses per cell and total sample size of 200 participants was deemed more than sufficient to obtain the targeted no of responses for each scenario. Using random sampling procedures, a sample size of 200 adults (working in the healthcare industry and based in the United States) were recruited via Amazon's Mturk, however only 178 (89%) of the responses were considered fit for

use. Twenty-two of the responses were disqualified based on the respondents' failure to pass the attention checks.

Participants were randomly assigned to one of four surveys. After agreeing to the terms of consent, participants were required to answer three questions to determine if they met the criteria for inclusion. Participants who met the criteria were able to proceed to complete the survey while those who did not meet the criteria were automatically directed to the end of the survey. Each of the experimental conditions had a workplace scenario that featured one of three incentive types: tangible incentives, intangible incentives and disincentives while the fourth condition served as the control group and had no incentive embedded in the given workplace scenario.

Measures

Individual ratings for personality, safety motivation and safety participation were assessed in this study. The survey questionnaire for this study consisted of a total of 107 questions which took approximately 20minutes to complete. A summary of the measures that were used is shown on table 4.1. The measures used in testing the hypotheses developed in this study and the rationale for the selection of the measures are described as follows:

Personality. Individual personality differences were assessed using the HEXACO-PI (Lee & Ashton, 2005). Thirty items out of the 60-item version of the HEXACO-PI were used to measure three of the six HEXACO personality dimensions: honesty-humility, emotionality and conscientiousness. The 30-item scale consists of 10 items for each of the three HEXACO personality traits that were being assessed in this study. The HEXACO-PI scale is well-validated using the HEXACO-PI with Cronbach's alphas ranging from .87 to .90 (Lee & Ashton, 2004; Weller & Tikir, 2011).

Safety Motivation. Safety motivation was measured using the 16-item final version of the self-determined safety motivation (SDSM) scale from Fleming (2012) and the 3-item safety motivation scale by Neal and Griffin (2003). The 16-items of the SDSM scale were modified and integrated into the responses to the scenario provided in the SJTs. This scale assessed the five levels of safety motivation theorized in the self-determination theory: (1) intrinsic (e.g.*"Because I have fun while working safely"*); (2) identified (e.g. *"Because working safely aligns with my personal values");* (3) introjected (e.g. *"Because I feel bad about myself when I don't work safely"*); (4) external (e.g. *"Because other people pressure me to work safely"*); (5) amotivation (e.g. *"I don't because safety is not a priority for me*"). Participants were required to respond to each item using a 7-point scale (1 = not at all for this reason; 7 = exactly for this reason). An additional item was added to the "external" level of the SDSM scale to specifically identify the influence of the randomized safety type incentive introduced in the SJT provided in the survey. For instance, the SJTs measuring the influence of tangible incentives and disincentives included the item: *"I would put effort into working safely: to avoid being fined / to get the 5% wage bonus"*. However, the SJT with "no incentive" did not include this item.

The SDSM scale was validated with each of the five subscales demonstrating acceptable internal reliabilities (Intrinsic, $\alpha = .85$; Identified, $\alpha = .86$; Introjected, $\alpha = .86$; External, $\alpha = .86$; Amotivation, $\alpha = .94$). The incentive simulated in each scenario were randomized between tangible incentives and disincentives with "no incentive" as the control group to ascertain if the incentive had a significant influence on the safety motivation level of individual respondents. Participants also completed a 3-item general safety motivation scale from Neal & Griffin (2006) using a 7-point scale (1 = strongly disagree; 7 = strongly agree). This scale was validated with a high correlation coefficient (Cronbach's alpha of the scale, $\alpha = .90$). This measure was added to assure

assessment of the safety motivation concepts that this study sought to measure. More so, it did not increase the burden on participants by much. With the combined used of the SDSM scale and the safety motivation scale, comparisons were made between both scales to identify differences in the safety motivation patterns of the respondents. An example of how the items of the SDSM scale were modified into the SJT is: *In this situation, I will put effort into behaving safely: "because working safely aligns with my personal values"*

Safety Behavior: This was measured using two scales; the 27-item safety citizenship scale developed by Hofmann et al. (2003) and the 3-item safety participation scale by Neal & Griffin (2006). These two scales were used to measure safety behavior in addition to the four items created for this study and intended to measure participants' specific behavioral response to the scenarios. The scenario in the SJTs presents a set of six possible responses which were crafted to reflect most to least safety-oriented behavior. For instance, the most safety-oriented response to the scenario was to; *"Immediately call Jordan's attention to the risk of infection and also report the situation to your crew supervisor to ensure that de-contamination procedures are enforced immediately"*

While the least safety-oriented behavior was to; *"ignore the incident"*. The responses to the SJTs were coded on a 6-point scale to reflect the level of safety behavior for each response. All these scales were used in this measure in order to effectively capture the behavioral safety inclinations of the participants in the study. The safety citizenship behavior scale and safety participation scale were modified and adapted into the SJTs to measure the safety behavior of the respondents based on the scenario in the SJT rather than their usual job. The safety citizenship items reflect safety participation factors such as safety-related helping, voice, stewardship, whistle blowing, civic virtue and initiating safety-related change. Respondents used a 5-point Likert-type

frequency rating scale ranging from 1 (most likely to engage in this behavior) to 5 (unlikely to engage in this behavior) to assess the degree to which they participate in safety efforts in their workplace. The safety citizenship behavior scale has been validated with high internal reliability ($\alpha = .97$). An example of how this scale was modified is: *If I did this kind of work at ABC, I would probably put effort into participation in safety by; "volunteering for safety committees".* Finally, the 3-item safety participation scale by Neal & Griffin (2006) was used to measure the general safety participation of the participants. This scale was validated with Cronbach's alpha, $\alpha = .91$. One sample item is *"I promote the safety program within the organization"*

Demographic and Other Control Variables: Relevant participant demographic questions were included in this study. These include: age, gender, ethnicity, occupation, industry and years of experience in the healthcare industry. Due to the exclusive use of self-report in this study, the issue of common method bias (CMB) associated with self-representation was a potential limitation in this study. CMB is a common problem in behavioral research which is a variance that occurs as a result of the measurement method used rather than the constructs that the measure is assumed to represent (Podsakoff, MacKenzie, & Podsakoff, 2003). This occurs when two or more constructs are measured using the same method thereby inflating or deflating the relationships between variables. CMB can threaten the validity of the conclusions about the relationship between variables resulting in random and systematic errors. Social desirability and positive/negative affectivity are the potential sources of CMB (Podsakoff, Mackenzie, Lee & Podsakoff, 2012). Social desirability refers to the tendency of a respondent to select responses in a manner that will make them be viewed more favorably by others through over-reporting of positive attributes and under-reporting of negative attributes (Nederhof, 1985). Negative/positive affectivity is the propensity of respondents to generally view themselves and the world around

them in negative terms (negative affect) or in positive terms (positive affect) (Podsakoff et al., 2003).

The potential problem of CMB was controlled for in this study by including a 6-item social desirability (SD) scale (Crowne & Marlowe, 1960) and a 10-item positive and negative affectivity scale (PANAS) (Thompson, 2007) as control variables. The SD scale was rated on a 7-point scale (1 = strongly disagree; 7 = strongly agree). The scale demonstrated acceptable levels of internal reliability with a Cronbach's alpha of .77. A sample item is *"I am always willing to admit when I make a mistake"*. The PANAS scale was rated on a 7-point scale (1 = never; 7 = always). The scale demonstrated acceptable internal consistency with a Cronbach's alpha of .86. A sample item from this scale is: *"thinking about yourself and how you normally feel, to what extent do you generally feel hostile?"*

Table 4.1: Summary of Questionnaire Measures

Measure	# of Items	Author(s)	Scale
HEXACO	30	Lee & Ashton, 2005	5; strongly disagree to strongly agree
Self-determined safety motivation scale (modified into the SJTs)	16(+1)	Fleming, 2012	7; strongly disagree to strongly agree
Safety motivation scale	3	Neal & Griffin, 2006	7; strongly disagree to strongly agree
SJT adapted responses for safety participation	6	--	6; Least likely to most likely
Safety Citizenship Behavior	27	Hofmann, Morgeson & Gerras, 2003	5; Definitely not engage in this behavior to Always engage in this behavior
Safety Participation	3	Neal & Griffin, 2003	7; strongly disagree to strongly agree
Social Desirability	6	Crowne & Marlowe, 1960	7; strongly disagree to strongly agree
Positive/Negative Affectivity	10	Thompson, 2007	7; Never to Always
Demographics	7	--	--

Data Analysis

Correlation analysis was used to test the relationship between personality characteristics and safety motivation/safety participation. Multiple regression analysis was used to test for main effects and significant interaction effects of personality and safety incentives on safety motivation outcomes. The data collected in the study was analyzed using SPSS while the responses for the SJTs were coded into corresponding scales for easy data entry and analyses of each corresponding data. Correlation analysis was used to determine the relationship between personality and safety motivation as well as the relationship between safety motivation and safety participation, while regression analysis was conducted to determine the moderating role of the various incentive types on the relationship between personality and safety motivation. Correlations and reliability (Cronbach's alpha) coefficients for each scale were computed to test the relationships among constructs and confirm the validity/internal reliabilities of the measures used. Having reviewed the methodology and measures used in the data analysis, the results of the analysis will be discussed in chapter 5.

Chapter 5: Results

Pilot

The main purpose of the pilot study was to test the incentive manipulations and determine the randomization rate for each scenario. The randomization of the four survey scenarios used in the pilot study resulted in a range of 7 to 12 responses per scenario condition which indicated that in order to obtain my benchmark of 40 participants per incentive condition, I needed a sample size of 200 participants for the main study. Fifty-four percent of the participants were male and the majority (70%) were Caucasian; 14% were Asian, and 6% African-American. Most of the participants were between the ages of 26 - 34 (70%); 17% were between ages 18-24; 10% between the ages of 35-54; 56% had a minimum of a bachelor's degree and 67% were frontline workers. Table 5.1 below shows the correlations obtained for the pilot study.

Table 5.1

Means, Standard Deviations and Zero Order Correlations for Pilot Study

		M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	1.85	.43															
2	Gender	1.46	.50	-.27														
3	Highest level of education	3.41	.97	.34*	.03													
4	Level of employment	4.49	1.05	-.00	.06	-.10												
5	Honesty Humility	3.18	.79	.08	.20	-.03	.04											
6	Conscientiousness	3.50	.73	.15	.22	.11	-.02	.50**										
7	Emotionality	2.73	.57	.05	.02	-.12	.08	-.49**	-.21									
8	Social Desirability	4.45	1.06	.21	-.05	-.08	.04	.50**	.11	-.33*								
9	PANAS	5.35	.98	-.00	-.03	.19	.02	.11	.45**	-.18	.14							
10	Intrinsic	5.01	1.12	.16	-.12	.02	.02	.05	.41*	.01	.18	.57**						
11	Extrinsic	4.91	.90	.17	-.22	.21	.05	-.02	.38	-04	.12	.58**	.63**					
12	Amotivation	2,75	1.62	-.19	-.05	-.04	-.26	-.43**	-.74**	.28	-.20	-.48**	-.47**	-.43**				
13	Safety Motivation	5.50	1.27	.14	-.08	.13	.03	.28	.62**	-.32*	.22	.64**	.67**	.63**	-.75**			
14	Safety Participation	3.86	.73	.08	.03	-.05	-.17	.33*	.58**	-.19	.34*	.55**	.70**	.63**	-.60**	.75**		
15	Safety Citizenship Behavior	5.57	1.16	.29	.03	.05	.00	.26	.61**	-.15	.35*	.59**	.72**	.59**	-.67**	.80**	.79**	

*Note. N = 40. *. P < .05 **. P < .01*

Main Study

The sample characteristics from the main study are presented in Table 5.2 below. Only 178 (89%) of the responses were considered fit for use. Twenty-two of the responses were disqualified based on the respondents' failure to pass the attention checks. There were slightly more females than males with a mean age of 33.78 years. The majority (77%) were between the ages of 25 and 44 years indicating that young and middle-aged were the predominant age group in this study. Over 97% of the respondents had high school or college education. Over 80 of them (46%) had worked for less than five years in the health care industry. Over 100 (60%) are frontline workers in the healthcare industry.

Table 5.2

Sample Characteristics (N=178)

Variables	**N=178**	**% (n=178)**	**Mean**	**SD**
Gender				
Male	88	49.4		
Female	89	50.0		
Age (years)			33.78	9.43
Under 25	16	9		
25-44	138	77.5		
45-64	22	12.4		
Over 65	2	1.1		
Race				
South Asian	5	2.8		
South-East Asian	2	1.1		
Arab/West Asian	1	0.6		
Black/African	21	11.8		
Caucasian	127	71.3		
Chinese	9	5.1		
Filipino	4	2.2		
Korean	1	0.6		
Latin-America	13	8.4		

Education				
High School/ below	21	11.8		
College Diploma	30	16.9		
Trade/Certification	12	6.7		
Bachelors	82	46.1		
Masters	23	12.9		
Doctorate	5	2.8		
In Progress	1	0.6		
Other	4	2.2		
Employment in Healthcare (years)			3.52	0.50
2-5	83	46.6		
Above 5	95	53.4		
Employment Level				
Executive	5	2.8		
Senior Manager	11	6.2		
Mid-level manager	20	11.2		
Supervisor	26	14.6		
Frontline Worker	108	60.7		
Other	7	7		

Descriptive Statistics and Correlations

The means, standard deviations, internal consistency reliabilities and intercorrelations among study variables are presented in Table 5.3.

Control variables. While not part of the formal hypotheses, this study examined the different facets of self-determined safety motivation (intrinsic motivation, extrinsic motivation and amotivation) as well as the control variables for common method bias; social desirability and positive and negative affect (PANAS). The correlation results showed H-H to be positively related to intrinsic motivation *(r* = .19, *p* < .05*)*, extrinsic motivation *(r* = .25, *p* < .01*)* and amotivation *(r* = .29, *p* < .01*)*; Emotionality was positively related to intrinsic motivation *(r* = .20, *p* < .01*)* and extrinsic motivation *(r* = .26, *p* < .01*)* but was not significantly correlated with amotivation *(r* =

.12*);* Conscientiousness was positively related to intrinsic motivation (r = .29, p < .05), extrinsic motivation *(*r = .48, p < .01*)* and amotivation *(*r = .57, p < .01*);* Social desirability *(*r = .41, p < .01*)* and PANAS *(*r = .44, p < .01*)* were also positively related with safety motivation.

Demographics. The correlation between each demographic variable and safety motivation was assessed to determine whether it was necessary to control for demographics in the subsequent regression models. Correlation analysis showed that gender was the only demographic variable that was significantly related to safety motivation *(*r = .16, p < .05*).*

Table 5.3

Means, Standard Deviations and Zero Order Correlations for Main Study

		M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	2.06	.51															
2	Gender	1.51	.51	.00														
3	Highest level of education	3.53	1.5	.12	-.07													
4	Level of employment	4.37	1.12	-.14	.22**	-.09												
5	Honesty Humility	3.34	.72	.15*	.20**	.10	.16*	(.81)										
6	Conscientiousness	3.72	.67	.13	.16*	.13	.14	.36**	(.80)									
7	Emotionality	3.16	.68	-.11	.48**	-.06	.15*	.04	.04	(.80)								
8	Social Desirability	4.54	1.12	.01	.11	.13	.04	.23**	.25**	.03	(.77)							
9	PANAS	5.28	.90	.20**	.06	.12	.00	.21**	.38**	-.24**	.42**	(.86)						
10	Intrinsic	4.97	1.43	-.02	.21**	.04	.09	.19*	.29**	.20**	.47**	.30**	(.85)					
11	Extrinsic	5.24	1.15	.07	.22**	.09	.09	.25**	.48**	.25**	.47**	.38**	.61**	(.86)				
12	Amotivation	5.88	1.38	.14	.12	.09	.30**	.29**	.57**	.12	.14	.26**	.11	.46**	(.94)			
13	Safety Motivation	5.76	1.39	.13	.16*	.04	.13	.26**	.45**	.09	.41**	.44**	.39**	.67**	-.60**	(.90)		
14	Safety Participation	3.73	.75	.09	.10	.09	.10	.25**	.47**	-.00	.50**	.43**	.54**	.61**	-.37**	.51**	(.91)	
15	Safety Citizenship Behavior	5.45	1.23	.06	.10	.08	.05	.24**	.40**	-.06	.49**	.46**	.53**	.54**	-.34**	.49**	.83**	(.97)

*Note. N = 178. Numbers in parentheses along the diagonal indicate internal consistency reliabilities. *. p < .05 **. p < .01*

Personality and Safety Motivation Findings

H1A: Honesty-humility will be positively associated with safety motivation in the workplace (SUPPORTED)

H1B: Emotionality will be positively associated with safety motivation in the workplace (NOT SUPPORTED)

H1C: Conscientiousness will be positively associated with safety motivation in the workplace (SUPPORTED)

As shown in Table 5.1, employee personality traits of honesty-humility (H-H) and conscientiousness were found to be positively associated with safety motivation *(*$r = .26$, $p < .01$*;* $r = .45$, $p < .01$ *respectively*). Hypothesis 1A and 1C were therefore supported. However, contrary to our expectations in this study, emotionality did not show a significant correlation with safety motivation *(*$r = .09$*);* hypothesis 1B was therefore not supported.

Incentive Effects

Moderation analyses. Regression analyses were conducted to determine the moderating effect of incentives; tangible, intangible and disincentives on the relationship between three of the six HEXACO personality dimensions (honesty-humility, conscientiousness and emotionality) and safety motivation (Baron & Kenny, 1986). A fourth group with no incentives was however introduced to serve as the control group in this study. Personality dimensions and incentives were the predictor variables while safety motivation was the outcome variable. The values for personality variables were centered on the mean while incentive was a dichotomous variable in which the presence of an incentive type was value-coded as '1' while the absence of the incentive was value-coded as '-1'. A total of 12 sets of analyses were conducted (one for the interaction effect between each personality and each incentive type).

I examined the interaction effect of each personality versus each incentive type in predicting safety motivation outcomes by entering a cross-product term of the two predictors. If the cross-product term was found to be a significant predictor of the outcome variable, I plotted a simple slope of the interaction to determine and compare the nature of the effect. When plotting the interaction, relationships were determined at incentive values of +1 and -1 to indicate the presence and absence of the incentive respectively. The results of the regression analyses are shown in Table 5.4a, 5.4b and 5.4c.

Analysis in step 1 of the regression results (Tables 5.4a, 5.4b and 5.4c) indicated that gender *(β = .16, p < .05)* was a significant predictor of safety motivation such that women were more likely to have higher safety motivation than men. In step 2, social desirability and positive and negative affect (PANAS) both significantly predicted safety motivation *(β = .26, p < .01 and β = .33, p < .01 respectively)* such that higher levels of both indicated higher safety motivation. Step 1 and step 2 results are the same for each personality trait, the remaining steps and results are described below.

Honesty-humility.

H2A: Tangible incentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and motivation will be weaker when a tangible incentive is offered (NOT SUPPORTED)

H3A: Intangible incentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and motivation will be stronger when an intangible incentive is offered (NOT SUPPORTED)

H4A: Disincentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and motivation will be stronger when a disincentive is offered (NOT SUPPORTED)

In step 3, the main effects of H-H and all the three incentive types (tangible, intangible and disincentives) were not significant predictors of safety motivation, likewise the interaction effects of H-H and incentives (in step 4) were not significant predictors of safety motivation thereby nullifying hypotheses 2a, 3a and 4a. However, for the control group "no incentive", in steps 3 and 4, there was a significant effect for "no incentive" *(β = .15, p < .05)* as a predictor of safety motivation. This signifies that none of the incentives had a significant influence on the safety motivation levels for the H-H personality dimension, however when there were no incentives, high H-H predicted higher safety motivation.

Table 5.4a

Summary of regression analyses for personality, safety incentives and safety motivation Honesty-Humility

	Safety Motivation Outcomes; Honesty-Humility											
	Tangible			**Intangible**			**Disincentive**			**No Incentive**		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Step 1												
Gender	.44	.20	.16*	44	.20	.16*	44	.20	.16*	44	.20	.16*
	R^2 = .03*			R^2 = .03*			R^2 = .03*			R^2 = .03*		
Step 2												
Gender	.31	.18	.11	.31	.18	.11	.31	.18	.11	.31	.18	.11
Social desirability	.32	.09	.26**	.32	.09	.26**	.32	.09	.26**	.32	.09	.26**
PANAS	.51	.11	.33**	.51	.11	.33**	.51	.11	.33**	.51	.11	.33**
	R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**			R^2=.27**; ΔR2 =.24**		
Step 3												
Gender	.25	.18	.09	.26	.18	.10	.25	.18	.09	.29	.18	.11
Social Desirability	.29	.09	.24**	.30	.09	.24**	.31	.09	.25**	.31	.09	.25**
PANAS	.48	.11	.31**	.48	.11	.31**	.47	.11	.30**	.47	.11	.30**
Honesty-humility	.24	.13	.12	.23	.13	.12	.24	.13	.12	.21	.13	.11
Incentive	-.19	-10	-.01	-.06	.11	-.04	-.18	.11	-.11	.24	.10	.15*
	R^2 = .28**; ΔR^2 =.01			R^2 = .28**; ΔR^2 =.01			R^2 = .29**; ΔR^2 =.02			R^2 = .30**; ΔR^2 =.03		
Step 4												
Gender	.26	.18	.10	.27	.18	.10	.22	.18	.08	.29	.18	.11
Social Desirability	.30	.09	.24**	.29	.09	.23**	.31	.09	.25**	.31	.09	.25**
PANAS	.49	.11	.31**	.49	.11	.31**	.47	.11	.30**	.47	.11	.30**
Honesty-humility	.20	.14	.10	.36	.16	.19*	.10	.19	.05	.21	.14	.11
Incentive	-.21	.10	.01	-.06	.11	-.03	-.18	.10	-.11	.24	.10	.15*
H-H * Incentive	-.01	.14	-.05	.22	.15	.12	-.19	-.10	-.01	.13	-.00	

$R^2 = .28^{**}$; $\Delta R^2 = .00$	$R^2 = .29^{**}$; $\Delta R^2 = .01$	$R^2 = .30^{**}$; $\Delta R^2 = .01$	$R^2 = .30^{**}$; $\Delta R^2 = .00$

Conscientiousness.

H2B: Tangible Incentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be weaker when a tangible incentive is offered (NOT SUPPORTED)

H3B: Intangible Incentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when an intangible incentive is offered (NOT SUPPORTED)

H4B: Disincentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when a disincentive is offered (NOT SUPPORTED)

In step 3, the main effect of conscientiousness was significant in predicting safety motivation irrespective of whether incentives were present or not. All the three incentive types (tangible, intangible and disincentives) were not significant predictors of safety motivation. However, the main effect of "no incentive" was a significant predictor of safety motivation *(β = .16, $p < .05$)* such that when there were no incentives, high conscientiousness predicted higher safety motivation. The interaction effect of conscientiousness and incentives (in step 4) were not significant predictors of safety motivation thereby nullifying hypotheses 2b, 3b and 4b. This indicates that incentives do not moderate the relationship between conscientiousness and safety motivation.

Table 5.4b

Summary of regression analyses for personality, safety incentives and safety motivation Conscientiousness

Safety Motivation Outcomes; Conscientiousness												
	Tangible			**Intangible**			**Disincentive**			**No Incentive**		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Step 1												
Gender	.44	.20	.16*	44	.20	.16*	44	.20	.16*	44	.20	.16*
	R^2 = .03*			R^2 = .03*			R^2 = .03*			R^2 = .03*		
Step 2												
Gender	.31	.18	.11	.31	.18	.11	.31	.18	.11	.31	.18	.11
Social desirability	.32	.09	.26**	.32	.09	.26**	.32	.09	.26**	.32	.09	.26**
PANAS	.51	.11	.33**	.51	.11	.33**	.51	.11	.33**	.51	.11	.33**
	R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**		
Step 3												
Gender	.20	.17	.07	.21	.17	.08	.20	.17	.07	.24	.17	.09
Social Desirability	.28	.09	.23**	.29	.09	.23**	.30	.09	.24**	.29	.08	.24**
PANAS	.35	.11	.22**	.35	.11	.22**	.33	.11	.21**	.33	.11	.21**
Conscientiousness	.63	.14	.30**	.63	.14	.30**	.63	.14	.30**	.63	.14	.30**
Incentive	-.03	.10	-.02	-.06	.10	-.03	-.18	.10	-.11	.24	.10	.16**
	R^2 = .34**; ΔR^2 = .07**			R^2 = .34**; ΔR^2 = .07**			R^2 = .35**; ΔR^2 = .08**			R^2 = .37**; ΔR^2 = .10**		
Step 4												
Gender	.22	.17	.08	.20	.17	.07	.21	.17	.08	.24	.17	.09
Social Desirability	.28	.09	.23**	.29	.09	.24**	.30	.09	.24**	.29	.08	.24**
PANAS	.37	.11	.24**	.34	.11	.22**	.33	.11	.21**	.33	.11	.21**
Conscientiousness	.57	.15	.27**	.80	.18	.38**	.68	.19	.32**	.61	.15	.29**
Incentive	-.03	.10	-.02	-.06	.10	-.03	-.18	.10	-.11	.25	.10	.16**
Consc. * Incentive	-.17	.14	-.08	.26	.17	.12	.07	.18	.03	-.04	.14	-.02
	R^2 = .35**; ΔR^2 = .01			R^2 = .35**; ΔR^2 = .01			R^2 = .35**; ΔR^2 = .00			R^2 = .37**; ΔR^2 = .00		

Emotionality.

H2C: Tangible Incentives will moderate the relationship between trait Emotionality and safety motivation, such that the positive relationship between Emotionality and motivation will be weaker when a tangible incentive is offered (NOT SUPPORTED)

H3C: Intangible Incentives will moderate the relationship between trait Emotionality and safety motivation, such that the positive relationship between Emotionality and motivation will be stronger when an intangible incentive is offered (SUPPORTED)

H4C: Disincentives will moderate the relationship between trait Emotionality and safety motivation, such that the positive relationship between Emotionality and motivation will be stronger when a disincentive is offered (NOT SUPPORTED)

In step 3, the main effect of emotionality was significant in predicting safety motivation for tangible incentive, disincentive and "no incentive" *(β* = .16, $p < .05$ *for all three*), but was not significant under intangible incentive. Also, in step 3, none of the three incentive types (tangible, intangible and disincentives) were significant predictors of safety motivation, however, the "no incentive" group was significant *(β* = .16. $p < .05$*)* such that incentives do not have a significant influence on the safety motivation levels for the emotionality personality dimension, however when there were no incentives, high emotionality predicted higher safety motivation. In step 4, the interaction term for emotionality and intangible incentive was significant *(β* = .65, $p < .05$*)* thereby supporting hypothesis 3c, while the interaction effects were insignificant for tangible incentive, disincentive and 'no incentive. This signifies that both tangible incentives and disincentives do not moderate the relationship between emotionality and safety motivation, while only intangible incentives moderate that relationship.

Table 5.4c:

Summary of regression analyses for personality, safety incentives and safety motivation Emotionality

	Safety Motivation Outcomes; Emotionality											
	Tangible			**Intangible**			**Disincentive**			**No Incentive**		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Step 1												
Gender	.44	.20	.16*	44	.20	.16*	44	.20	.16*	44	.20	.16*
	R^2 = .03*			R^2 = .03*			R^2 = .03*			R^2 = .03*		
Step 2												
Gender	.31	.18	.11	.31	.18	.11	.31	.18	.11	.31	.18	.11
Social desirability	.32	.09	.26**	.32	.09	.26**	.32	.09	.26**	.32	.09	.26**
PANAS	.51	.11	.33**	.51	.11	.33**	.51	.11	.33**	.51	.11	.33**
	R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**			R^2 = .27**; ΔR^2 = .24**			R^2 =.27**; ΔR^2 =.24**		
Step 3												
Gender	.10	.21	.04	.12	.21	.04	.11	.20	.04	.14	.20	.05
Social Desirability	.29	.09	.23**	.30	.09	.24**	.31	.09	.25**	.31	.09	..25**
PANAS	.58	.12	.38**	.58	.12	.37**	.57	.12	.36**	.57	.12	.36**
Emotionality	.32	.116	.16*	.31	.16	.15	.31	.16	.16*	.32	.16	.16*
Incentive	-.04	.10	-.03	-.61	.11	-.04	-.18	.11	-.11	.26	.10	.16*
	R^2 = .28**; ΔR^2 =.01			R^2 = .28**; ΔR^2 =.01			R^2 = .29**; ΔR^2 =.02**			R^2 = .31**; ΔR^2 =.04**		
Step 4												
Gender	.10	.21	.04	.13	.21	.05	.15	.21	.05	.13	.20	.05
Social Desirability	.29	.09	.23**	.28	.09	.23**	.31	.09	.25**	.31	.09	.25**
PANAS	.59	.12	.38**	.60	.12	.38**	.56	.12	.36**	.56	.12	.36**
Emotionality	.33	.17	.16	.47	.17	.23**	.13	.19	.06	.30	.17	.14
Incentive	-.06	.50	-.04	-1.09	.48	-.66*	.70	.54	.42	.47	.47	.30

Emot. * Incentive	.00	.15	.10	.33	.15	.65*	-.28	.17	-.55	-.07	.15	-.14
	$R^2 = .28^{**}$; $\Delta R^2 = .00$			$R^2 = .30^{**}$; $\Delta R^2 = .02$			$R^2 = .31^{**}$; $\Delta R^2 = .02$			$R^2 = .31^{**}$; $\Delta R^2 = .00$		

Simple slopes analyses revealed a significant and positive slope between emotionality and safety motivation when intangible incentives were present as a moderator *(b* = .30, $t_{(174)}$ =2.34, *p* < .05*;* see fig. 5.1*)* indicating that when intangible incentives are offered, safety motivation is increased at higher levels of emotionality and a zero-slope when there was no intangible incentive present indicating that the safety motivation of individuals remains unchanged when intangible incentives like recognition and feedback are not offered.

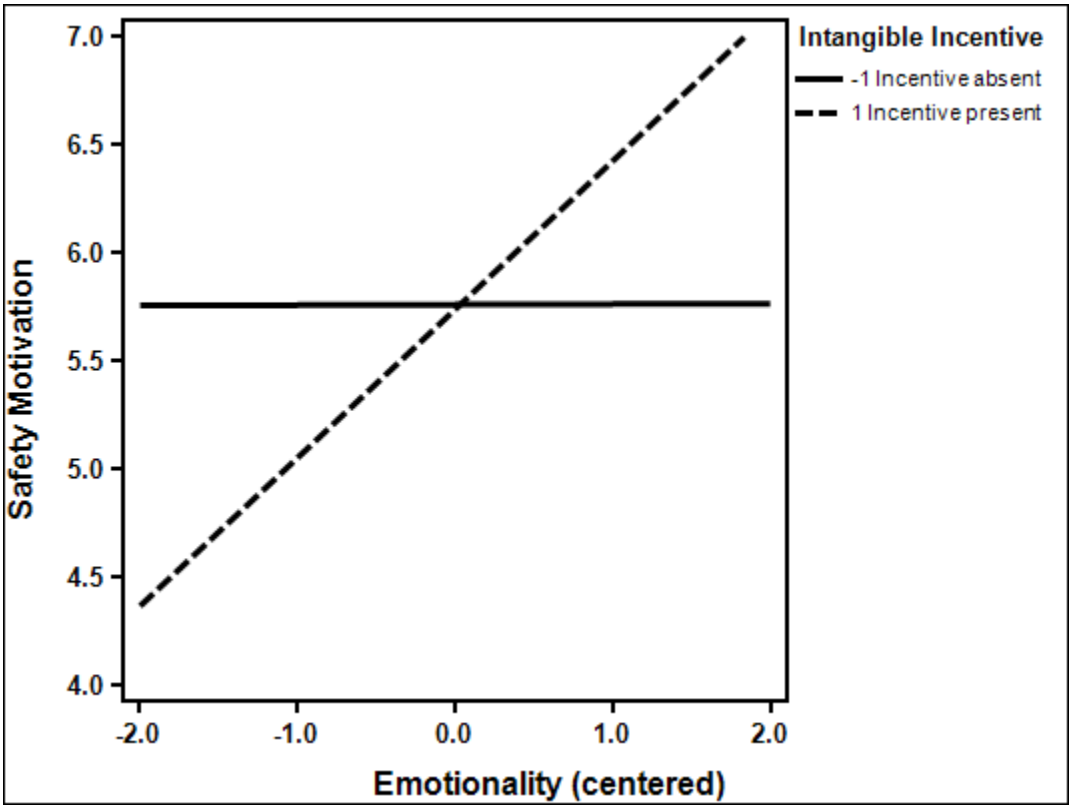

Fig. 5.1 Interaction between Emotionality and Intangible Incentive in predicting safety motivation

Safety Motivation and Safety Participation

H5 Safety motivation will be positively associated with safety participation (SUPPORTED)

The means, standard deviations, internal consistency reliabilities (in parentheses) and intercorrelations (along diagonal) among safety motivation and safety participation variables are presented in Table 5.3. Consistent with our expectations in hypothesis 5, safety motivation was significantly positively correlated with safety participation ($r = .51$, $p < .01$) and safety citizenship behavior ($r = .49$; $p < .01$). This indicates that higher safety motivation results in increased safety participation.

Situational Judgement Tests. The situational judgement tests provided in this study offer an alternative way to measure the relationships between personality, motivation and safety participation. Respondents ranked the six behavioral response options provided in order of their "most likely" response to their "least likely" response when faced with such a situation in the workplace. The six response options for the SJTs were value coded on a scale of 1 to 6 with the lowest level of safety participation being the lowest ranking option as follows;

- *6 = ignore the incident;*
- *5 = later in private, call Jordan's attention to the situation;*
- *4 = report the incident to your supervisor at the end of your shift;*
- *3 = immediately call the situation to Jordan's attention;*
- *2 = immediately call the situation to the attention of your crew supervisor;*
- *1 = immediately call the situation to Jordan's attention AND report it to your crew supervisor*).

Table 5.5 shows the frequency distribution of responses to the SJT. The table shows that 60% of the respondents were most likely to "immediately call the situation to Jordan's attention" while 74% of the respondents were least likely to "ignore the incident".

Table 5.5

Frequency Distribution for SJTs; N = 178 (percentages in parentheses)

SJT responses	**1**	**2**	**3**	**4**	**5**	**6**
Ignore the incident.	5 (2.8)	6 (3.4)	14 (7.9)	10 (5.6)	11 (6.2)	132 (74.2)
Later in private, call Jordan's attention to the situation.	14 (7.9)	63 (35.4)	27 (15.2)	31 (17.4)	41 (23.0)	2 (1.1)
Report the incident to your crew supervisor at the end of the shift.	7 (3.9)	10 (5.6)	13 (7.3)	55 (30.9)	70 (39.3)	23 (12.9)
Immediately call the situation to Jordan's attention.	107 (60.1)	28 (15.7)	21 (11.8)	10 (5.6)	9 (5.1)	3 (1.7)
Immediately call the situation to the attention of your crew supervisor.	13 (7.3)	15 (8.4)	52 (29.2)	46 (25.8)	37 (20.8)	15 (8.4)
Immediately call the situation to Jordan's attention AND report it to your crew supervisor	32 (18.0)	56 (31.5)	51 (28.7)	26 (14.6)	10 (5.6)	3 (1.7)

Table 5.6 includes the means, standard deviations and Spearman's rank correlation among SJT variables. Reverse scoring in Table 5.4 indicates a significant positive relationship between Conscientiousness and the "least likely" response option "*ignore the incident*" ($r = .23$, $p < .01$), this indicates that individuals with lower levels of Conscientiousness are more likely to choose the low participation response.

On the other hand, there was a significant negative correlation between conscientiousness and the "most likely" response option "*immediately call the situation to Jordan's attention*" at ($r = -.36$, $p < .01$), based on the reverse scoring used, this indicates that individuals with higher levels of conscientiousness are more likely to choose the more responsive action. There was also a significant positive correlation between safety motivation and the "least likely" response option

"*ignore the incident*" (r = .19, p < .05) while a significant negative correlation exists between safety motivation and the "most likely" response "*immediately call the situation to Jordan's attention*" (r = -33, p < .01). Based on the reverse scoring used, this indicates that individuals with high safety motivation are more likely to choose the more responsive, safety-oriented behavior while employees with low safety motivation are more likely to choose the less responsive, less safety-oriented behavior and are less likely to participate in safety. This finding further supports our hypothesis 5 that safety motivation is positively correlated with safety participation. H-H and emotionality had no significant correlation with any of the SJT responses.

Table 5.6

Means, Standard Deviations and Spearman's Correlations for SJTs

		M	SD	1	2	3	4	5	6	7	8	9
1	Ignore the incident.	5.31	1.33									
2	Later in private, call Jordan's attention to the situation.	3.16	1.36	.12								
3	Report the incident to your crew supervisor at the end of the shift.	4.35	1.20	-.24**	-.22**							
4	Immediately call the situation to Jordan's attention AND report it to your crew supervisor	2.63	1.20	-.20**	-.49**	-.19*						
5	Immediately call the situation to Jordan's attention.	1.85	1.29	-.31**	.05	-.31**	-.23**					
6	Immediately call the situation to the attention of your crew supervisor.	3.70	1.32	-.43**	-.54**	.03	.19**	-.22**				
7	Honesty-humility	3.34	.72	.13	.04	-.03	-.13	-.10	.06			
8	Conscientiousness	3.72	.67	.23**	-.04	.01	.05	-.36**	.10	.36**		
9	Emotionality	3.16	.68	.01	.00	.02	.02	-.09	.04	.04	.04	
10	Safety Motivation	5.76	1.39	.19*	-.04	.04	.02	-.33**	.12	.26**	.45**	.09

N = 178. *. P < .05 **. p < .01

Chapter 6: Discussion

The aim of this study was to investigate the extent to which different types of safety incentives will increase the safety motivation of individuals with differing personalities and further result in safety participation efforts. Research has demonstrated that personality is a predictor of safety motivation, and that safety incentives are a factor in motivating safe behavior in the workplace. However, little attention has been given to the possibility that the relationship between personality and safety motivation may be moderated by the use of different types of incentives. More so, no existing study has assessed the role of the HEXACO H-H personality trait as it relates to safety motivation. This study provides support for the role that personality plays in predicting safety motivation and its resulting influence on safety participation. It also contributes new knowledge by exploring how individuals with different personality types are motivated to embrace workplace safety when offered some type of safety incentive or disincentive. In general, the results of this study suggest that safety motivation outcomes are not influenced by safety incentives for the H-H and conscientiousness dimensions of the HEXACO. Intangible incentives were found to have a significant influence on the emotionality personality dimension. Below is a discussion of the findings.

Personality in Predicting Safety Motivation Outcomes

I found that H-H and conscientiousness are positively related to safety motivation. However, contrary to my expectations based on previous studies that associated emotionality with heightened risk-perception and risk-aversion (Weller & Tikir, 2011; Lee et al., 2005), emotionality was not a significant predictor of safety motivation. My finding regarding conscientiousness in this study further provides support for the findings of existing literature, while my findings

regarding H-H and emotionality are novel because no existing research has previously tested those relationships.

Honesty-Humility (H-H). My result as hypothesized, shows that the H-H personality dimension is a predictor of safety motivation without the inclusion of any safety incentives. This implies that individuals with higher levels of H-H will be more inclined to engage in safe workplace behaviors. This finding is novel as no existing research has previously linked the HEXACO H-H personality dimension to safety motivation outcomes. The introduction of various incentives as a moderator did not have a significant influence on the relationship between H-H and safety motivation. However, H-H increases safety motivation only when intangible incentives are present. This may be explained by the fact that intangible incentives encourage individuals with high H-H to pay more attention to safe behaviors because they elicit positive feedback or recognition. On the other hand, tangible incentives such as money or gifts and disincentives such as monetary fines do not have any significant influence on individuals' motivation to embrace safe behaviors in the workplace. To the best of my knowledge, only one other study measures the relationship between H-H and safety. Weller & Tikir, 2011 found a positive relationship between H-H and the health and safety domain of risk-taking and risk perception which is in line with my results providing further support for the importance of the H-H in predicting safety outcomes. The findings in this study regarding H-H are important in that they provide an additional perspective to the H-H personality dimension by establishing the fact that a positive relationship exists between the H-H personality and safety motivation which has not previously been examined in workplace safety literature.

Conscientiousness. Consistent with my hypothesis, conscientiousness is a strong predictor of safety motivation and remains a strong predictor after each of the incentive types are

introduced. This implies that individuals who are highly conscientious are more likely to engage in safe workplace behaviors while individuals who are low in conscientiousness have lower safety motivation. This finding provides further support for the meta-analytic findings of Christian et al. (2009) regarding conscientiousness as a predictor of safety motivation outcomes. This finding is justified by the fact that individuals with high conscientiousness are hard workers and concerned about rules and procedure. It is therefore less likely that the presence or absence of any form of incentive will diminish their intrinsic tendency to do the right thing including engaging in safe workplace behaviors.

Emotionality. Although the relationship between conscientiousness and safety motivation is quite well established in literature, there is less research investigating the relationship between Emotionality and safety motivation as most studies previously used neuroticism in the big five as a variant for emotionality and agreeableness (Christian et al., 2009; Volrath & Togersen, 2002). Contrary to my hypothesis, emotionality is not a predictor of safety motivation when safety incentives are not provided. This indicates that emotionality does not necessarily translate to an individual's inclination to engage in safe behavior in the workplace. Existing literature (Vollrath & Togersten, 2002) found neuroticism was positively associated with risk-taking behaviors. In the HEXACO model, emotionality is a rotational variant of neuroticism in that emotionality is more a reflection of vulnerability and harm avoidance tendencies and does not capture anger or hostility.

The only study that has directly examined the correlation between the HEXACO emotionality dimension and risk-taking/safety related outcomes is that of Weller & Tikir (2011). They found that emotionality was negatively associated with risk-taking behaviors. It is interesting to note that my findings do not align with the findings of either study as this study did not find any direct association between emotionality and safety motivation outcomes. Previous studies used the

personality constructs of the FFM in which neuroticism is a rotational variant for the HEXACO emotionality and agreeableness. Emotionality differs from neuroticism in that unlike neuroticism, the HEXACO emotionality does not capture traits of hostility. This key difference in both traits may explain why neuroticism predicted risk-taking behavior in previous studies (Vollrath & Togersten, 2002) while emotionality did not predict safety motivation in this study.

In my research emotionality does predict safety motivation outcomes when tangible incentives and disincentives are introduced. However, intangible incentives actually interact with emotionality to significantly predict safety motivation outcomes. Individuals who are emotional are described as being overly sensitive, anxious and fearful (Lee et al, 2005). Based on these attributes, I expected that high emotionality would result in high safety motivation. My finding regarding the lack of relationship between emotionality and safety motivation in this study were contrary to my expectation. One possible explanation for this outcome may be that emotional individuals may counter-argue or shut-out the implications of their actions or inactions as a fear coping mechanism. Fear appeal literature suggests that fear appeals that lack efficacy statements will produce weaker effects resulting in maladaptive behaviors (Witte & Allen, 2000). The significance of the moderating effect of intangible incentive on the relationship between emotionality and safety motivation was as expected and may be explained if people who are emotional are more easily influenced by feedback and recognition because they care more about others' opinion of them (Lee et al, 2005).

Incentives as a Moderator of Personality and Safety Motivation Outcomes

In this study, I found incentives were not a strong moderator of the relationship between H-H and conscientiousness across all three incentive types, contrary to my expectations. However, as hypothesized, intangible incentives were found to moderate the relationship between emotionality

and safety motivation in that safety motivation increased at high emotionality when intangible incentives like praise, recognition and feedback were offered. This finding is a novel contribution to the industrial psychology/workplace safety literature. I expected that there would be a significant interaction between safety incentives and personality as it relates to safety motivation. However, considering that there are contrasting suggestions by researchers regarding the effectiveness of safety incentives in enhancing safety motivation outcomes, this interaction could have gone in any direction. It appears that individuals who are high in H-H and conscientiousness will remain motivated to behave safely whether incentives are offered or not while individuals low in H-H and conscientiousness will have low safety motivation irrespective of incentives. The reverse is the case for emotionality in that intangible incentives play a strong role in influencing the safety motivation levels of individuals with high emotionality. This is not surprising considering that high emotionality is characterized by heightened sensitivity, anxiety and fearfulness, and individuals with high emotionality tend to thrive on the commendation and approval of their superiors and co-workers in the workplace. Therefore, intangible incentives such as feedback and recognition will likely have a strong influence on them and motivate them to engage more in behaviors that elicit such intangible incentives. Table 6.1 below summarizes my findings regarding the moderating effect of incentives on personality and safety motivation.

Table 6.1

Summary of Effect of Moderation Variables (Incentives) on Safety Motivation outcomes

Personality	**Tangible**	**Intangible**	**Disincentive**
Honesty-Humility	Non-significant	Non-significant	Non-significant
Conscientiousness	Non-significant	Non-significant	Non-significant
Emotionality	Non-significant	Significant	Non-significant

Safety motivation in predicting Safety Participation Outcomes

My results show that safety motivation is a significant predictor of safety participation. These results fully support the findings of Christian et al.'s (2011) meta-analysis as depicted in the integrative model of workplace safety. Christian et al. (2011) outlined the various safety participation efforts in actions such as: communication, helping, stewardship, exercising rights, whistleblowing, civic virtue and initiating safety-related change. These same actions are categorized by Hoffman (2003) as safety citizenship behaviors (SCB) which were used as a measure for determining safety participation in this study. As expected, my results showed safety motivation to be a strong predictor of SCBs. Situational Judgement Tests (SJTs) were also used in this study to identify the safety participation tendencies of individuals. Respondents' ranking of their most likely to least likely response when faced with a similar situation at work revealed that most individuals (74%) are unlikely to ignore an unsafe action. This implies that 3 in 4 individuals will likely participate in safety efforts however minimal, while 1 in 4 individuals will likely overlook an unsafe action in the workplace. Essentially, individuals who are high in safety motivation are more likely to participate in safety efforts in the workplace.

Limitations and Opportunities for future Research

This study is not without its limitations. One potential concern is the use of self-reports which may lead to common method bias (CMB). CMB is a problem in behavioral research. It is a variance that occurs as a result of the measurement method used rather than the constructs that the measure is assumed to represent (Podsakoff, MacKenzie, & Podsakoff, 2003). This occurs when two or more constructs are measured using the same method thereby inflating or deflating the relationships between variables. CMB can threaten the validity of the conclusions about the relationship between variables resulting in random and systematic errors. While I acknowledge

that CMB is a concern that should be seriously considered, some researchers have suggested that CMB is not as serious as has been suggested (e.g Lindell & Whitney, 2001).

According to Conway & Lance (2010), there are numerous cases where self-reports are the most theoretically appropriate method of measurement. Most of the variables used in this study are best assessed by the respondents themselves as it relates to the respondent's internal psychological state, motives and inclination. I however controlled for social desirability and positive/negative affectivity which were the potential sources of CMB (Podsakoff, Mackenzie, Lee & Podsakoff, 2012) in this study. Social desirability refers to the tendency of a respondent to select responses in a manner that will make them be viewed more favorably by others through over-reporting of positive attributes and under-reporting of negative attributes (Nederhof, 1985). Negative/positive affectivity is the propensity of respondents to generally view themselves and the world around them in negative terms (negative affect) or in positive terms (positive affect) (Podsakoff et al., 2003).

Since the measures used in this study are aimed at capturing individuals' motives and inclination (e.g. self-determined safety motivation, safety citizenship behavior, situational judgement tests etc.), it made sense to use self-reports as the measurement method while controlling for factors like social desirability and positive/negative affect of respondents to identify sources of bias in the respondents. Finally, from a statistical perspective, common method bias tends to magnify the size of the relationship among variables. This inflation in relationship among variables tends to increase type II errors in testing cross-product terms in moderated multiple regression analysis which can make it more difficult to detect interaction effects. Considering that the aim of this current study is to assess the moderating effect of incentives and personality in

predicting safety outcomes, it is less likely that the significant interaction effect observed in this study was influenced by the effect of common method variance.

A second potential limitation in this study is that my findings from the SJTs are limited by the responses provided to the respondents and therefore may be a biased and inaccurate depiction of an individual's actual safety behaviors. It does however give a broad picture of the general safety inclination of individuals irrespective of their personality. Perhaps, a different SJT may look more into how the individual will act themselves rather than their likely reaction towards someone who did not follow a safety rule. An alternative approach that could have been used in carrying out this study might be to ask respondents to answer questions based on a recent personal experience. For example, the study could begin by asking respondents to *"Think about the last time you saw a co-worker engage in an unsafe behavior"*.

The third potential limitation in this study is the issue of unfair comparisons with respect to the relative weights of the various incentives provided such that the relative. For instance, the use of 5% wage increase as a tangible incentive or a 5% fine as a disincentive may not be considered a fair comparison with the intangible incentive of recognizing employees safety efforts by putting up their pictures on the notice board as well as acknowledging them during their annual performance appraisal. This study made use of a "no incentive" condition as the control group, however a direct comparison of the results for each incentive condition and the control group was not carried out in this study. Further analysis can provide more clarity by directly comparing how respondents reacted to each incentive condition against their reaction when there was no incentive. Finally, the sample used in this study consisted mainly of healthcare workers residing in the United States. This might limit the generalizability of my results across other industries and countries

considering that the nature of risk attached to different industries will differ, likewise across different countries.

One direction for future research would be to examine and compare the moderating effects of safety incentives and personality differences on safety motivation outcomes across various industries and nationalities. It is important to recognize that personality is only one factor influencing safety motivation and safety behavior. Another direction for future studies would be to look at other possible factors that could moderate the personality – safety motivation relationship such as locus of control, safety climate and organizational culture. This study could also be extended by also assessing these factors as possible moderators of the relationship between safety motivation and safety participation.

Practical and Theoretical Implications

This study supports some previous findings regarding personality and safety outcomes. It also provides novel insights regarding the role of personality differences (H-H, emotionality) in predicting safety motivation outcomes and the moderating role of safety incentives in influencing the relationship between personality and safety motivation outcomes. There are three major and interesting findings. Firstly, individuals who are high in H-H are more likely to have high safety motivation, while individuals who are lower in H-H have less motivation to engage in safe workplace behaviors. It is also important to note that intangible incentives were more influential in improving safety motivation of individuals with high H-H personality than tangible incentives or disincentives. Secondly, from my results in this study, emotionality was not a significant determinant of an individual's propensity to engage in safe workplace behaviors. In other words, an individual's level of emotional stability or instability may not be a direct factor to consider in

predicting if an individual is likely to engage in safe workplace behaviors. Thirdly, intangible incentives were found to be a significant factor in motivating safe behaviors for individuals with high emotionality, while a lack of intangible incentives may reduce the safety motivation of such individuals.

These findings have important implications in theory and practice. The practical implications of these findings should focus on ways to increase safety motivation particularly among low H-H and emotionality individuals. As organizations seek to implement various incentives to motivate employees' safe behaviors in the workplace, one key strategy will be the use of intangible incentives. In this study intangible incentives are an influential factor in predicting safety motivation for H-H and moderating of safety motivation for emotionality. It will be helpful, or at least not detrimental, for organizations to prioritize the implementation of intangible incentives like recognition and feedback as a means of motivating safe behaviors amongst employees. High safety motivation among employees will in turn result in greater safety participation and ultimately facilitate a positive safety climate which numerous studies (Hoffman et al., 2003; Christian et al., 2012) have shown to be a key factor in reducing accidents and injuries in the workplace.

In addition to the practical implications, an important theoretical implication is the establishment of H-H as a key personality factor in workplace safety motivation research. H-H showed a significant correlation with safety motivation ($r = .26$). This result is consistent with the tendency of high H-H individuals to be honest, modest and sincere which makes them more inclined to engage in positive behaviors including safe workplace behaviors. The results described highlight the importance of the H-H factor in workplace safety research. Considering that

attitudinal traits related to H-H are not fully captured by the five-factor personality model, it may be prudent to adopt the HEXACO model for workplace safety research.

Conclusion

In conclusion, this study provides evidence to support previous findings on conscientiousness as it relates to safety motivation. This study also suggests the unique contribution of different personality dimensions and incentive types which may be an explanation for the prior inconclusive findings on the effect of safety incentives on safety motivation. My research shows that tangible incentives and disincentives may not have a major impact on the safety motivation of most individuals irrespective of their personality, although, some individuals (high emotionality) are influenced by intangible incentives. It is important design safety motivation systems to meet the unique needs of individuals in the workplace. By understanding the role that incentives play in the relationship between different personality types and safety motivation and its resultant impact on safety participation, I may be able to develop more effective safety awareness programs that will help build good safety culture and ultimately safer workplaces.

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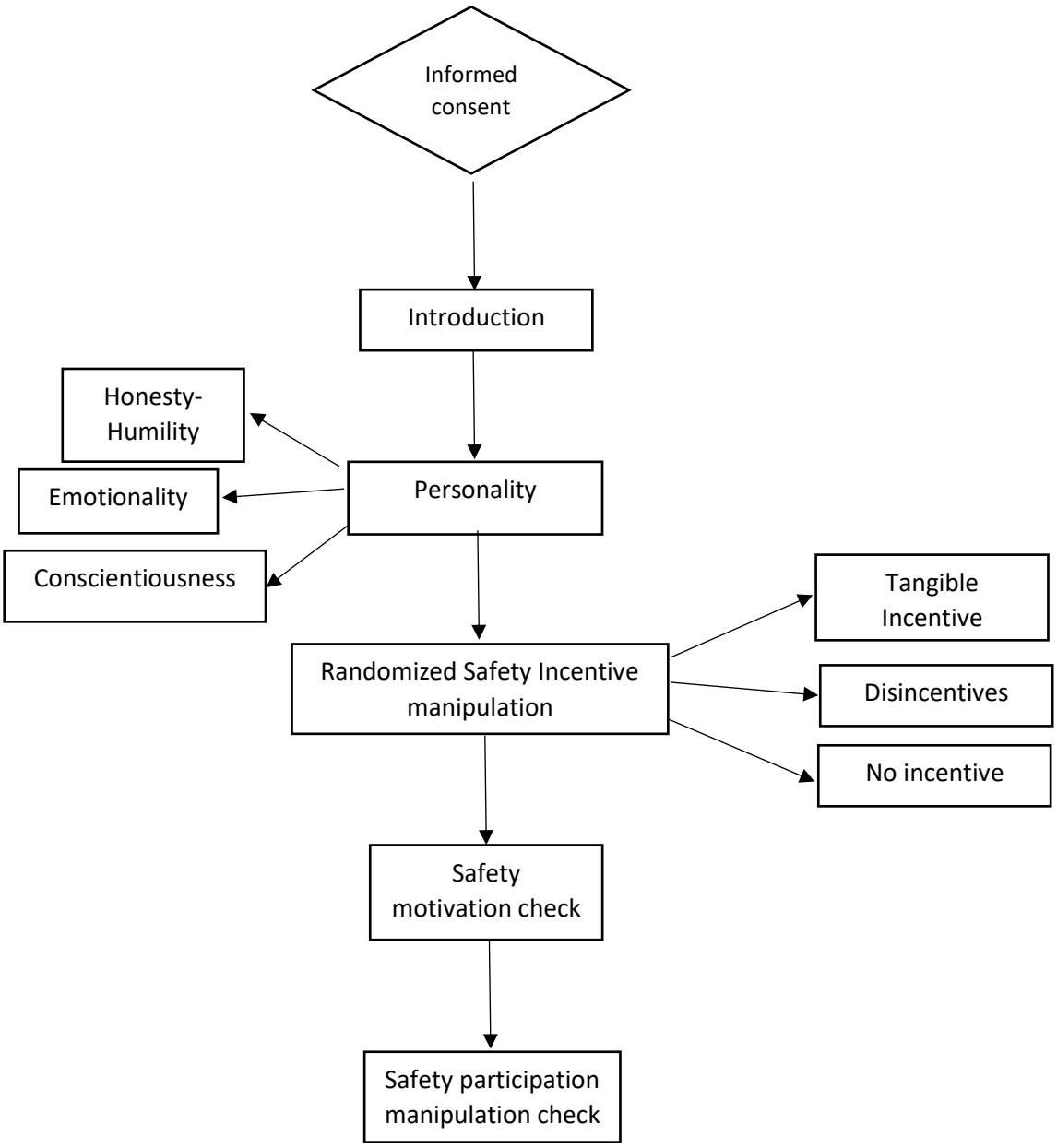
Appendix A

FLOW CHART OF STUDY



Appendix B

HYPOTHESIS:

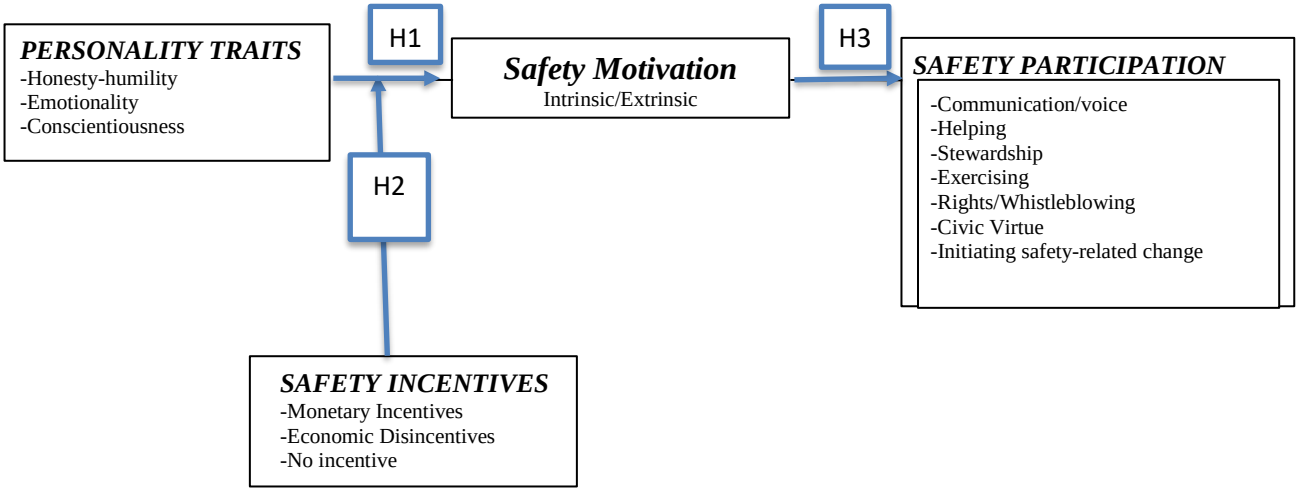


Figure 2.2. Hypothesized model of Safety Participation; Modified from an Integrative model of workplace safety (Christian et al, 2009)

Hypothesis:

H1A : Honesty-humility will be positively associated with safety motivation in the workplace

H1B: Emotionality will be positively associated with safety motivation in the workplace

H1C: Conscientiousness will be positively associated with safety motivation in the workplace

H2A: Tangible incentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and motivation will be weaker when a tangible incentive is offered

H2B: Tangible Incentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be weaker when a tangible incentive is offered

H2C: Tangible Incentives will moderate the relationship between trait Emotionality and safety motivation, such that the positive relationship between Emotionality and motivation will be weaker when a tangible incentive is offered

H3A: Intangible incentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and motivation will be stronger when an intangible incentive is offered

H3B: Intangible Incentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when an intangible incentive is offered

H3C: Intangible Incentives will moderate the relationship between trait Emotionality and safety motivation, such that the positive relationship between Emotionality and motivation will be stronger when an intangible incentive is offered

H4A: Disincentives will moderate the relationship between trait H-H and safety motivation, such that the positive relationship between H-H and motivation will be stronger when a disincentive is offered

H4B: Disincentives will moderate the relationship between trait conscientiousness and safety motivation, such that the positive relationship between conscientiousness and motivation will be stronger when a disincentive is offered

H4C: Disincentives will moderate the relationship between trait emotionality and safety motivation, such that the positive relationship between emotionality and motivation will be stronger when a disincentive is offered

H5: Safety motivation will be positively associated with safety participation.

Appendix C

Questionnaire for Tangible Incentives

HEXACO-PI-R (Self Report Form)

The following statements are aimed at assessing your personality type. Please indicate the degree of your **agreement or disagreement** with each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers

1=Strongly Disagree
2=Disagree
3=Neutral
4=Agree
5=Strongly Agree

1. I plan ahead and organize things, to avoid scrambling at the last minute.
2. I would feel afraid if I had to travel in bad weather conditions.
3. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
4. I often push myself very hard when trying to achieve a goal.
5. I sometimes can't help worrying about little things.
6. If I knew that I could never get caught, I would be willing to steal a million dollars.
7. When working on something, I don't pay much attention to small details.
8. When I suffer from a painful experience, I need someone to make me feel comfortable.
9. Having a lot of money is not especially important to me.
10. I make decisions based on the feeling of the moment rather than on careful thought.
11. I feel like crying when I see other people crying.
12. I think that I am entitled to more respect than the average person is.
13. When working, I sometimes have difficulties due to being disorganized.
14. When it comes to physical danger, I am very fearful.
15. If I want something from someone, I will laugh at that person's worst jokes.
16. I do only the minimum amount of work needed to get by.
17. I worry a lot less than most people do.
18. I would never accept a bribe, even if it were very large.
19. I always try to be accurate in my work, even at the expense of time.
20. I can handle difficult situations without needing emotional support from anyone else.
21. I would get a lot of pleasure from owning expensive luxury goods.
22. I make a lot of mistakes because I don’t think before I act.
23. I feel strong emotions when someone close to me is going away for a long time.

24. I want people to know that I am an important person of high status.
25. People often call me a perfectionist.
26. Even in an emergency I wouldn't feel like panicking.
27. I wouldn't pretend to like someone just to get that person to do favors for me.
28. I prefer to do whatever comes to mind, rather than stick to a plan.
29. I remain unemotional even in situations where most people get very sentimental.
30. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

SDSM Scale (Fleming, 2012)

Instructions:

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Please read carefully and select the response that best applies to you based on the given scenario.

(Tangible Incentives)

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift.

- All crew members are expected to **wear the designated Personal Protective Equipment** (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
- Workers should **not work alone** at any point in time
- Communication on each **in-patient's status must be updated** every half hour
- **Any omission** by an employee to use required safety gear should be **immediately reported** to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

In a bid to increase employees' safety motivation, ABC hospital is offering **5% of monthly wage bonus** at the end of the month to members of the crew who have displayed the highest commitment to safety. Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action.

In this situation, I would put effort into working safely

1 = Not at all for this reason
2 = Rarely

3 = possibly
4 = probably
5 = Often
6 = Most likely
7 = Exactly for this reason

1. Because I have fun while working safely
2. Because it makes me happy
3. Because I enjoy working safely
4. Because putting effort into working safely is important to me
5. Because I believe it is important to put effort into working safely for my own well-being and that of people around me
6. Because working safely aligns with my personal values
7. Because otherwise I would feel guilty about putting my patients and co-workers at risk
8. Because I feel bad about myself when I don't work safely
9. Because I would be ashamed of myself if I didn't work safely
10. In order to avoid being criticized by my crew members
11. In order to get the 5% wage bonus
12. In order to get approval from my crew members
13. Because other people (e.g supervisors, colleagues etc) pressure me to work safely
14. I don't because it doesn't make a difference whether I work safely or not
15. I don't because safety is not a priority in my workplace
16. I don't because safety is not a priority for me
17. I don't because working safely is not worth the effort

Safety motivation Scale

1=Strongly Disagree
2=Disagree
3=Slightly Disagree
4=Neutral
5=Slightly Agree
6=Agree
7=Strongly Agree

1. I feel that it is worthwhile to put in effort to maintain or improve my personal safety
2. I feel that it is important to maintain safety always
3. I believe that it is important to reduce the risk of accidents and incidents in the workplace

SJT Response for Safety Participation level

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Six possible reactions have been provided. Please read carefully and select for each reaction, the option that best describes how you are most likely or least likely to respond to the given scenario.

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift. All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g hand gloves, face masks and gowns) when caring for patients

All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g hand gloves, face masks and gowns) when caring for patients

- All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g hand gloves, face masks and gowns) when caring for patients
- Workers should not work alone at any point in time
- Communication on each in-patient's status must be updated every half hour
- Any omission by an employee to use required safety gear should be immediately reported to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

At the end of each month, any crew with a zero record of injury/incidents gets a free pizza lunch, and is recognized by placing pictures of all members of the crew on the hospital's central notice board. Supervisors of the crew with a zero record of injury/incident are recognized in their annual performance evaluations. Although the hospital policy indicates that the goal is to have zero incidents, the approach to safety violations is usually to temporarily reassign the employees involved and provide feedback to let them know how to improve. Employees are disciplined only if they have repeatedly violated safety policy or if the incident is very serious and results in lost time injury/illness.

In a bid to increase employees' safety motivation, ABC hospital is offering **5% of monthly wage bonus** at the end of the month to members of the crew who have displayed the highest commitment to safety. Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action. In this situation, what will you do?

1 = Very unlikely
2 = Slightly unlikely
3 = Undecided
4 = Slightly likely
5 = Very likely

1) Ignore the incident.
2) Later in private, call Jordan's attention to the situation.
3) Immediately call the situation to Jordan's attention.
4) Report the incident to your crew supervisor at the end of the shift.
5) Immediately call the situation to the attention of your crew supervisor.
6) Immediately call the situation to Jordan's attention AND report it to your crew supervisor.

Safety Citizenship behavior measure (Hofmann et al, 2003)

Based on the workplace scenario in ABC Hospital provided above, the following statements assess your inclination to participate in safety in the workplace. Please indicate your likelihood to engage or not engage in the behavior outlined in each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers.

1 = Never engage in this behavior
2 = Rarely engage in this behavior
3 = Sometimes engage in this behavior
4 = Often engage in this behavior
5 = Always engage in this behavior

If I did this kind of work at ABC, I would probably put effort into participation in safety by:

1. Volunteering for safety committees
2. Helping teach safety procedures to new crew members
3. Assisting others to make sure they perform their work safely
4. Getting involved in safety activities to help my crew work more safely
5. Helping other crew members learn about safe work practices
6. Helping others with safety related responsibilities
7. Making safety-related recommendations about work activities
8. Speaking up and encouraging others to get involved in safety issues
9. Expressing opinions on safety matters even if others disagree
10. Raising safety concerns during planning sessions
11. Protecting fellow crew members from safety hazards

12. Going out of my way to look out for the safety of other crew members
13. Taking action to protect other crew members from risky situations
14. Trying to prevent other crew members from being injured on the job
15. Taking action to stop safety violations in order to protect the well-being of other crew members
16. Explaining to other crew members that I will report safety violations
17. Telling other crew members to follow safe working procedures
18. Monitoring new crew members to ensure they are performing safely
19. Reporting crew members who violate safety procedures
20. Telling new crew members that violations of safety procedures will not be tolerated
21. Attending safety meetings
22. Attending non-mandatory safety-oriented trainings
23. Keeping informed of changes in safety policies and procedures
24. Trying to improve safety procedures
25. Trying to change the way the job is done to make it safer
26. Trying to change policies and procedures to make them safer
27. Making suggestions to improve the safety of a mission

Safety Participation measure developed by Neal & Griffin (2003)

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Undecided
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

1. I would promote the safety program within the organization
2. I would put in extra effort to improve the safety of the workplace
3. I would voluntarily carry out tasks or activities that help to improve workplace safety

Social Desirability

This is not a test of your ability. It simply asks you to assess, as accurately as possible, your attitudes and behaviors toward others. Please indicate the number of your choice by selecting the appropriate number on the right of each statement.

1=Strongly Disagree=SD

2=Disagree=D
3=Slightly Disagree=SLD
4=Neutral=N
5=Slightly Agree=SLA
6=Agree=A
7=Strongly Agree=SA

		SD	D	SLD	N	SLA	A	SA
1	I never hesitate to go out of my way to help someone in trouble.	1	2	3	4	5	6	7
2	I have never intensely disliked anyone.	1	2	3	4	5	6	7
3	No matter whom I am talking to, I am always a good listener.	1	2	3	4	5	6	7
4	I am always willing to admit when I make a mistake.	1	2	3	4	5	6	7
5	I always try to practice what I preach.	1	2	3	4	5	6	7
6	I do not find it difficult to get along with loud-mouthed people.	1	2	3	4	5	6	7

PANAS

The following statements are about **how you felt** in general. Please indicate **how frequently** you generally felt this way **during the past year.** Please write the number of your choice, based on the scale given below.

1 --- Never
2 --- Almost never
3 --- Seldom
4 --- Sometimes
5 --- Usually
6 --- Almost always
7 --- Always

<u>During the past year, generally you were feeling</u>:

___ (01) Determined
___ (02) Ashamed
___ (03) Attentive
___ (04) Afraid

___ (05) Alert
___ (06) Upset
___ (07) Nervous
___ (08) Active
___ (09) Hostile
___ (10) Inspired

Demographic Variables

1. What is your age? _____
2. What is your gender?
   Male
   Female
   Prefer not to say
   Other: _____ (please specify)
3. What is your race? (Please select any option which represents more than 25% of your heritage)
   Aboriginal
   Arab/West Asian
   Black/African
   Caucasian
   Chinese
   Filipino
   Japanese
   Korean
   Latin-American
   South-Asian
   South-East Asian

   Other: _____ (please specify)
4. What is the highest level of education you have completed?
   High School or below
   College diploma
   Trade /Certification
   Bachelors
   Masters
   Doctorate
   In progress (please specify): _____
   Other (please specify): _____
5. Have you been employed in the healthcare sector within the last five years?
   Yes

No

6. How long have you worked in the healthcare sector?
   Less than two years
   2 to 5 years
   More than 5years
7. What is/was your job title in the health care sector? _____
8. What is/was your level of employment in the healthcare sector?
   Executive
   Senior Manager
   Mid-level manager
   Supervisor
   Frontline worker
   Other
   I have not worked in the healthcare sector

For any questions regarding this study, its purpose or procedures, or to receive the research results, please feel free to contact Subomi Ibitoye, at ibitoyeo@uleth.ca or 403-970-4895

Appendix D

Questionnaire for Intangible Incentives

HEXACO-PI-R (Self Report Form)

The following statements are aimed at assessing your personality type. Please indicate the degree of your **agreement or disagreement** with each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers

1=Strongly Disagree
2=Disagree
3=Neutral
4=Agree
5=Strongly Agree

1. I plan ahead and organize things, to avoid scrambling at the last minute.
2. I would feel afraid if I had to travel in bad weather conditions.
3. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
4. I often push myself very hard when trying to achieve a goal.
5. I sometimes can't help worrying about little things.
6. If I knew that I could never get caught, I would be willing to steal a million dollars.
7. When working on something, I don't pay much attention to small details.
8. When I suffer from a painful experience, I need someone to make me feel comfortable.
9. Having a lot of money is not especially important to me.
10. I make decisions based on the feeling of the moment rather than on careful thought.
11. I feel like crying when I see other people crying.
12. I think that I am entitled to more respect than the average person is.
13. When working, I sometimes have difficulties due to being disorganized.
14. When it comes to physical danger, I am very fearful.
15. If I want something from someone, I will laugh at that person's worst jokes.
16. I do only the minimum amount of work needed to get by.
17. I worry a lot less than most people do.
18. I would never accept a bribe, even if it were very large.
19. I always try to be accurate in my work, even at the expense of time.
20. I can handle difficult situations without needing emotional support from anyone else.
21. I would get a lot of pleasure from owning expensive luxury goods.
22. I make a lot of mistakes because I don’t think before I act.

23. I feel strong emotions when someone close to me is going away for a long time.
24. I want people to know that I am an important person of high status.
25. People often call me a perfectionist.
26. Even in an emergency I wouldn't feel like panicking.
27. I wouldn't pretend to like someone just to get that person to do favors for me.
28. I prefer to do whatever comes to mind, rather than stick to a plan.
29. I remain unemotional even in situations where most people get very sentimental.
30. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

SDSM Scale (Fleming, 2012)

Instructions:

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Please read carefully and select the response that best applies to you based on the given scenario.

(Intangible Incentives)

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift.

- All crew members are expected to **wear the designated Personal Protective Equipment** (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
- Workers should **not work alone** at any point in time
- Communication on each **in-patient's status must be updated** every half hour
- **Any omission** by an employee to use required safety gear should be **immediately reported** to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

In a bid to increase employees' safety motivation, ABC hospital has decided that at the end of each month, members of the crew who have displayed the highest commitment to safety **will be recognized by placing pictures of all members of the crew on the hospital's central notice board. Also, Supervisors of the crews with a zero record of injury/accident will be recognized in their annual performance evaluations**. Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action.

In this situation, I would put effort into working safely

1 = Not at all for this reason
2 = Rarely
3 = possibly
4 = probably
5 = Often
6 = Most likely
7 = Exactly for this reason

1. Because I have fun while working safely
2. Because it makes me happy
3. Because I enjoy working safely
4. Because putting effort into working safely is important to me
5. Because I believe it is important to put effort into working safely for my own well-being and that of people around me
6. Because working safely aligns with my personal values
7. Because otherwise I would feel guilty about putting my patients and co-workers at risk
8. Because I feel bad about myself when I don't work safely
9. Because I would be ashamed of myself if I didn't work safely
10. In order to avoid being criticized by my crew members
11. In order to have my picture on the central notice board
12. In order to get approval from my crew members
13. Because other people (e.g. supervisors, colleagues etc.) pressure me to work safely
14. I don't because it doesn't make a difference whether I work safely or not
15. I don't because safety is not a priority in my workplace
16. I don't because safety is not a priority for me
17. I don't because working safely is not worth the effort

Safety motivation Scale

1=Strongly Disagree
2=Disagree
3=Slightly Disagree
4=Neutral
5=Slightly Agree
6=Agree
7=Strongly Agree

1. I feel that it is worthwhile to put in effort to maintain or improve my personal safety

2. I feel that it is important to maintain safety always
3. I believe that it is important to reduce the risk of accidents and incidents in the workplace

SJT Response for Safety Participation level

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Six possible reactions have been provided. Please read carefully and select for each reaction, the option that best describes how you are most likely or least likely to respond to the given scenario.

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift. All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients

- All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
- Workers should not work alone at any point in time
- Communication on each in-patient's status must be updated every half hour
- Any omission by an employee to use required safety gear should be immediately reported to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

At the end of each month, any crew with a zero record of injury/incidents gets a free pizza lunch, and is recognized by placing pictures of all members of the crew on the hospital's central notice board. Supervisors of the crew with a zero record of injury/incident are recognized in their annual performance evaluations. Although the hospital policy indicates that the goal is to have zero incidents, the approach to safety violations is usually to temporarily reassign the employees involved and provide feedback to let them know how to improve. Employees are disciplined only if they have repeatedly violated safety policy or if the incident is very serious and results in lost time injury/illness.

In a bid to increase employees' safety motivation, ABC hospital has decided that at the end of each month, members of the crew who have displayed the highest commitment to safety **will be recognized by placing pictures of all members of the crew on the hospital's central notice board. Also, Supervisors of the crews with a zero record of injury/accident will be recognized in their annual performance evaluations.** Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves

as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action. In this situation, what will you do?

1 = Very unlikely
2 = Slightly unlikely
3 = Undecided
4 = Slightly likely
5 = Very likely

1) Ignore the incident.
2) Later in private, call Jordan's attention to the situation.
3) Immediately call the situation to Jordan's attention.
4) Report the incident to your crew supervisor at the end of the shift.
5) Immediately call the situation to the attention of your crew supervisor.
6) Immediately call the situation to Jordan's attention AND report it to your crew supervisor.

Safety Citizenship behavior measure (Hofmann et al, 2003)

Based on the workplace scenario in ABC Hospital provided above, the following statements assess your inclination to participate in safety in the workplace. Please indicate your likelihood to engage or not engage in the behavior outlined in each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers.

1 = Never engage in this behavior
2 = Rarely engage in this behavior
3 = Sometimes engage in this behavior
4 = Often engage in this behavior
5 = Always engage in this behavior

If I did this kind of work at ABC, I would probably put effort into participation in safety by:

1. Volunteering for safety committees
2. Helping teach safety procedures to new crew members
3. Assisting others to make sure they perform their work safely
4. Getting involved in safety activities to help my crew work more safely
5. Helping other crew members learn about safe work practices
6. Helping others with safety related responsibilities

7. Making safety-related recommendations about work activities
8. Speaking up and encouraging others to get involved in safety issues
9. Expressing opinions on safety matters even if others disagree
10. Raising safety concerns during planning sessions
11. Protecting fellow crew members from safety hazards
12. Going out of my way to look out for the safety of other crew members
13. Taking action to protect other crew members from risky situations
14. Trying to prevent other crew members from being injured on the job
15. Taking action to stop safety violations in order to protect the well-being of other crew members
16. Explaining to other crew members that I will report safety violations
17. Telling other crew members to follow safe working procedures
18. Monitoring new crew members to ensure they are performing safely
19. Reporting crew members who violate safety procedures
20. Telling new crew members that violations of safety procedures will not be tolerated
21. Attending safety meetings
22. Attending non-mandatory safety-oriented trainings
23. Keeping informed of changes in safety policies and procedures
24. Trying to improve safety procedures
25. Trying to change the way the job is done to make it safer
26. Trying to change policies and procedures to make them safer
27. Making suggestions to improve the safety of a mission

Safety Participation measure developed by Neal & Griffin (2003)

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Undecided
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

1. I always promote the safety program within the organization
2. I always put in extra effort to improve the safety of the workplace
3. I always voluntarily carry out tasks or activities that help to improve workplace safety

Social Desirability

This is not a test of your ability. It simply asks you to assess, as accurately as possible, your attitudes and behaviors toward others. Please indicate the number of your choice by selecting the appropriate number on the right of each statement.

1=Strongly Disagree=SD
2=Disagree=D
3=Slightly Disagree=SLD
4=Neutral=N
5=Slightly Agree=SLA
6=Agree=A
7=Strongly Agree=SA

		SD	D	SLD	N	SLA	A	SA
1	I never hesitate to go out of my way to help someone in trouble.	1	2	3	4	5	6	7
2	I have never intensely disliked anyone.	1	2	3	4	5	6	7
3	No matter whom I am talking to, I am always a good listener.	1	2	3	4	5	6	7
4	I am always willing to admit when I make a mistake.	1	2	3	4	5	6	7
5	I always try to practice what I preach.	1	2	3	4	5	6	7
6	I do not find it difficult to get along with loud-mouthed people.	1	2	3	4	5	6	7

PANAS

The following statements are about **how you felt** in general. Please indicate **how frequently** you generally felt this way **during the past year.** Please write the number of your choice, based on the scale given below.

1 --- Never
2 --- Almost never
3 --- Seldom
4 --- Sometimes
5 --- Usually
6 --- Almost always
7 --- Always

During the past year, generally you were feeling:

___ (01) Determined
___ (02) Ashamed
___ (03) Attentive
___ (04) Afraid
___ (05) Alert
___ (06) Upset
___ (07) Nervous
___ (08) Active
___ (09) Hostile
___ (10) Inspired

Demographic Variables

1. What is your age? _____
2. What is your gender?
   Male
   Female
   Prefer not to say
   Other: _____ (please specify)
3. What is your race? (Please select any option which represents more than 25% of your heritage)
   Aboriginal
   Arab/West Asian
   Black/African
   Caucasian
   Chinese
   Filipino
   Japanese
   Korean
   Latin-American
   South-Asian
   South-East Asian
   Other: _____ (please specify)
4. What is the highest level of education you have completed?
   High School or below
   College diploma
   Trade/Certification

Bachelors
Masters
Doctorate
In progress (please specify): _____
Other (please specify): _____

5. Have you been employed in the healthcare sector within the last five years?
   Yes
   No
6. How long have you worked in the healthcare sector?
   Less than two years
   2 to 5 years
   More than 5years
7. What is/was your job title in the health care sector? _____
8. What is/was your level of employment in the healthcare sector?
   Executive
   Senior Manager
   Mid-level manager
   Supervisor
   Frontline worker

Appendix E

Questionnaire for Disincentives

HEXACO-PI-R (Self Report Form)

The following statements are aimed at assessing your personality type. Please indicate the degree of your **agreement or disagreement** with each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers

1=Strongly Disagree
2=Disagree
3=Neutral
4=Agree
5=Strongly Agree

1. I plan ahead and organize things, to avoid scrambling at the last minute.
2. I would feel afraid if I had to travel in bad weather conditions.
3. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
4. I often push myself very hard when trying to achieve a goal.
5. I sometimes can't help worrying about little things.
6. If I knew that I could never get caught, I would be willing to steal a million dollars.
7. When working on something, I don't pay much attention to small details.
8. When I suffer from a painful experience, I need someone to make me feel comfortable.
9. Having a lot of money is not especially important to me.
10. I make decisions based on the feeling of the moment rather than on careful thought.
11. I feel like crying when I see other people crying.
12. I think that I am entitled to more respect than the average person is.
13. When working, I sometimes have difficulties due to being disorganized.
14. When it comes to physical danger, I am very fearful.
15. If I want something from someone, I will laugh at that person's worst jokes.
16. I do only the minimum amount of work needed to get by.
17. I worry a lot less than most people do.
18. I would never accept a bribe, even if it were very large.
19. I always try to be accurate in my work, even at the expense of time.
20. I can handle difficult situations without needing emotional support from anyone else.
21. I would get a lot of pleasure from owning expensive luxury goods.
22. I make a lot of mistakes because I don’t think before I act.
23. I feel strong emotions when someone close to me is going away for a long time.

24. I want people to know that I am an important person of high status.
25. People often call me a perfectionist.
26. Even in an emergency I wouldn't feel like panicking.
27. I wouldn't pretend to like someone just to get that person to do favors for me.
28. I prefer to do whatever comes to mind, rather than stick to a plan.
29. I remain unemotional even in situations where most people get very sentimental.
30. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

SDSM Scale (Fleming, 2012)

Instructions:

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Please read carefully and select the response that best applies to you based on the given scenario.

(Disincentives)

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift.

- All crew members are expected to **wear the designated Personal Protective Equipment** (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
- Workers should **not work alone** at any point in time
- Communication on each **in-patient's status must be updated** every half hour
- **Any omission** by an employee to use required safety gear should be **immediately reported** to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

In a bid to increase employees' safety motivation, ABC hospital is imposing a **5% of monthly wage deduction** at the end of the month to members of the crew who have displayed a very low commitment to safety. Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action.

In this situation, I would put effort into working safely

1 = Not at all for this reason
2 = Rarely

3 = possibly
4 = probably
5 = Often
6 = Most likely
7 = Exactly for this reason

1. Because I have fun while working safely
2. Because it makes me happy
3. Because I enjoy working safely
4. Because putting effort into working safely is important to me
5. Because I believe it is important to put effort into working safely for my own well-being and that of people around me
6. Because working safely aligns with my personal values
7. Because otherwise I would feel guilty about putting my patients and co-workers at risk
8. Because I feel bad about myself when I don't work safely
9. Because I would be ashamed of myself if I didn't work safely
10. In order to avoid being criticized by my crew members
11. In order to avoid being fined
12. In order to get approval from my crew members
13. Because other people (e.g. supervisors, colleagues etc.) pressure me to work safely
14. I don't because it doesn't make a difference whether I work safely or not
15. I don't because safety is not a priority in my workplace
16. I don't because safety is not a priority for me
17. I don't because working safely is not worth the effort

Safety motivation Scale
1=Strongly Disagree
2=Disagree
3=Slightly Disagree
4=Neutral
5=Slightly Agree
6=Agree
7=Strongly Agree

1. I feel that it is worthwhile to put in effort to maintain or improve my personal safety
2. I feel that it is important to maintain safety always
3. I believe that it is important to reduce the risk of accidents and incidents in the workplace

SJT Response for Safety Participation level

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Six possible reactions have been provided. Please read carefully and select for each reaction, the option that best describes how you are most likely or least likely to respond to the given scenario.

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift. All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients

All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients

- All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
- Workers should not work alone at any point in time
- Communication on each in-patient's status must be updated every half hour
- Any omission by an employee to use required safety gear should be immediately reported to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

At the end of each month, any crew with a zero record of injury/incidents gets a free pizza lunch, and is recognized by placing pictures of all members of the crew on the hospital's central notice board. Supervisors of the crew with a zero record of injury/incident are recognized in their annual performance evaluations. Although the hospital policy indicates that the goal is to have zero incidents, the approach to safety violations is usually to temporarily reassign the employees involved and provide feedback to let them know how to improve. Employees are disciplined only if they have repeatedly violated safety policy or if the incident is very serious and results in lost time injury/illness.

In a bid to increase employees' safety motivation, ABC hospital is imposing a **5% of monthly wage deduction** at the end of the month to members of the crew who have displayed a very low commitment to safety. Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action. In this situation, what will you do?

1 = Very unlikely
2 = Slightly unlikely
3 = Undecided
4 = Slightly likely
5 = Very likely

1) Ignore the incident.
2) Later in private, call Jordan's attention to the situation.
3) Immediately call the situation to Jordan's attention.
4) Report the incident to your crew supervisor at the end of the shift.
5) Immediately call the situation to the attention of your crew supervisor.
6) Immediately call the situation to Jordan's attention AND report it to your crew supervisor.

Safety Citizenship behavior measure (Hofmann et al, 2003)

Based on the workplace scenario in ABC Hospital provided above, the following statements assess your inclination to participate in safety in the workplace. Please indicate your likelihood to engage or not engage in the behavior outlined in each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers.

1 = Never engage in this behavior
2 = Rarely engage in this behavior
3 = Sometimes engage in this behavior
4 = Often engage in this behavior
5 = Always engage in this behavior

If I did this kind of work at ABC, I would probably put effort into participation in safety by:

1. Volunteering for safety committees
2. Helping teach safety procedures to new crew members
3. Assisting others to make sure they perform their work safely
4. Getting involved in safety activities to help my crew work more safely
5. Helping other crew members learn about safe work practices
6. Helping others with safety related responsibilities
7. Making safety-related recommendations about work activities
8. Speaking up and encouraging others to get involved in safety issues
9. Expressing opinions on safety matters even if others disagree
10. Raising safety concerns during planning sessions
11. Protecting fellow crew members from safety hazards
12. Going out of my way to look out for the safety of other crew members

13. Taking action to protect other crew members from risky situations
14. Trying to prevent other crew members from being injured on the job
15. Taking action to stop safety violations in order to protect the well-being of other crew members
16. Explaining to other crew members that I will report safety violations
17. Telling other crew members to follow safe working procedures
18. Monitoring new crew members to ensure they are performing safely
19. Reporting crew members who violate safety procedures
20. Telling new crew members that violations of safety procedures will not be tolerated
21. Attending safety meetings
22. Attending non-mandatory safety-oriented trainings
23. Keeping informed of changes in safety policies and procedures
24. Trying to improve safety procedures
25. Trying to change the way the job is done to make it safer
26. Trying to change policies and procedures to make them safer
27. Making suggestions to improve the safety of a mission

Safety Participation measure developed by Neal & Griffin (2003)

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Undecided
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

1. I always promote the safety program within the organization
2. I always put in extra effort to improve the safety of the workplace
3. I always voluntarily carry out tasks or activities that help to improve workplace safety

Social Desirability

This is not a test of your ability. It simply asks you to assess, as accurately as possible, your attitudes and behaviors toward others. Please indicate the number of your choice by selecting the appropriate number on the right of each statement.

1=Strongly Disagree=SD
2=Disagree=D

3=Slightly Disagree=SLD
4=Neutral=N
5=Slightly Agree=SLA
6=Agree=A
7=Strongly Agree=SA

		SD	D	SLD	N	SLA	A	SA
1	I never hesitate to go out of my way to help someone in trouble.	1	2	3	4	5	6	7
2	I have never intensely disliked anyone.	1	2	3	4	5	6	7
3	No matter whom I am talking to, I am always a good listener.	1	2	3	4	5	6	7
4	I am always willing to admit when I make a mistake.	1	2	3	4	5	6	7
5	I always try to practice what I preach.	1	2	3	4	5	6	7
6	I do not find it difficult to get along with loud-mouthed people.	1	2	3	4	5	6	7

PANAS

The following statements are about **how you felt** in general. Please indicate **how frequently** you generally felt this way **during the past year.** Please write the number of your choice, based on the scale given below.

1 --- Never
2 --- Almost never
3 --- Seldom
4 --- Sometimes
5 --- Usually
6 --- Almost always
7 --- Always

<u>During the past year, generally you were feeling:</u>

___ (01) Determined
___ (02) Ashamed
___ (03) Attentive
___ (04) Afraid
___ (05) Alert

___ (06) Upset
___ (07) Nervous
___ (08) Active
___ (09) Hostile
___ (10) Inspired

Demographic Variables

1. What is your age? _____
2. What is your gender?
   Male
   Female
   Prefer not to say
   Other: _____ (please specify)
3. What is your race? (Please select any option which represents more than 25% of your heritage)
   Aboriginal
   Arab/West Asian
   Black/African
   Caucasian
   Chinese
   Filipino
   Japanese
   Korean
   Latin-American
   South-Asian
   South-East Asian
   Other: _____ (please specify)
4. What is the highest level of education you have completed?
   High School or below
   College diploma
   Trade/Certification
   Bachelors
   Masters
   Doctorate
   In progress (please specify): _____
   Other (please specify): _____
5. Have you been employed in the healthcare sector within the last five years?
   Yes
   No

6. How long have you worked in the healthcare sector?
   Less than two years
   2 to 5 years
   More than 5years
7. What is/was your job title in the health care sector? _____
8. What is/was your level of Employment in the healthcare sector?
   Executive
   Senior Manager
   Mid-level manager
   Supervisor
   Frontline worker

For any questions regarding this study, its purpose or procedures, or to receive the research results, please feel free to contact Subomi Ibitoye, at ibitoyeo@uleth.ca or 403-970-4895

Appendix F

Questionnaire for No Incentives (Control Group)

HEXACO-PI-R (Self Report Form)

The following statements are aimed at assessing your personality type. Please indicate the degree of your **agreement or disagreement** with each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers

1=Strongly Disagree
2=Disagree
3=Neutral
4=Agree
5=Strongly Agree

1. I plan ahead and organize things, to avoid scrambling at the last minute.
2. I would feel afraid if I had to travel in bad weather conditions.
3. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
4. I often push myself very hard when trying to achieve a goal.
5. I sometimes can't help worrying about little things.
6. If I knew that I could never get caught, I would be willing to steal a million dollars.
7. When working on something, I don't pay much attention to small details.
8. When I suffer from a painful experience, I need someone to make me feel comfortable.
9. Having a lot of money is not especially important to me.
10. I make decisions based on the feeling of the moment rather than on careful thought.
11. I feel like crying when I see other people crying.
12. I think that I am entitled to more respect than the average person is.
13. When working, I sometimes have difficulties due to being disorganized.
14. When it comes to physical danger, I am very fearful.
15. If I want something from someone, I will laugh at that person's worst jokes.
16. I do only the minimum amount of work needed to get by.
17. I worry a lot less than most people do.
18. I would never accept a bribe, even if it were very large.
19. I always try to be accurate in my work, even at the expense of time.
20. I can handle difficult situations without needing emotional support from anyone else.
21. I would get a lot of pleasure from owning expensive luxury goods.
22. I make a lot of mistakes because I don’t think before I act.
23. I feel strong emotions when someone close to me is going away for a long time.

24. I want people to know that I am an important person of high status.
25. People often call me a perfectionist.
26. Even in an emergency I wouldn't feel like panicking.
27. I wouldn't pretend to like someone just to get that person to do favors for me.
28. I prefer to do whatever comes to mind, rather than stick to a plan.
29. I remain unemotional even in situations where most people get very sentimental.
30. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

SDSM Scale (Fleming, 2012)

Instructions:

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Please read carefully and select the response that best applies to you based on the given scenario.

(No Incentive)

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift.

- All crew members are expected to **wear the designated Personal Protective Equipment** (PPE) (e.g. hand gloves, face masks and gowns) when caring for patients
- Workers should **not work alone** at any point in time
- Communication on each **in-patient's status must be updated** every half hour
- **Any omission** by an employee to use required safety gear should be **immediately reported** to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

In a bid to increase employees' safety motivation, ABC hospital has advised all workers to embrace safety in the workplace and look out for the safety of other members of the crew.

Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action.

In this situation, I would put effort into working safely

1 = Not at all for this reason
2 = Rarely

3 = possibly
4 = probably
5 = Often
6 = Most likely
7 = Exactly for this reason

1. Because I have fun while working safely
2. Because it makes me happy
3. Because I enjoy working safely
4. Because putting effort into working safely is important to me
5. Because I believe it is important to put effort into working safely for my own well-being and that of people around me
6. Because working safely aligns with my personal values
7. Because otherwise I would feel guilty about putting my patients and co-workers at risk
8. Because I feel bad about myself when I don't work safely
9. Because I would be ashamed of myself if I didn't work safely
10. In order to avoid being criticized by my crew members
11. In order to get the 5% wage bonus
12. In order to get approval from my crew members
13. Because other people (e.g. supervisors, colleagues etc.) pressure me to work safely
14. I don't because it doesn't make a difference whether I work safely or not
15. I don't because safety is not a priority in my workplace
16. I don't because safety is not a priority for me
17. I don't because working safely is not worth the effort

Safety motivation Scale

1=Strongly Disagree
2=Disagree
3=Slightly Disagree
4=Neutral
5=Slightly Agree
6=Agree
7=Strongly Agree

1. I feel that it is worthwhile to put in effort to maintain or improve my personal safety
2. I feel that it is important to maintain safety always
3. I believe that it is important to reduce the risk of accidents and incidents in the workplace

SJT Response for Safety Participation level

The following scenario will examine your **judgment and decision-making with respect to safe workplace behaviors**. Six possible reactions have been provided. Please read carefully and select for each reaction, the option that best describes how you are most likely or least likely to respond to the given scenario.

ABC Hospital is very concerned about the safety of its healthcare workers. Due to the high influx of patients with infectious diseases that are cared for daily, health care supervisors are required to brief their crew about the safety behaviors expected from crew members at the start of every shift. All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g hand gloves, face masks and gowns) when caring for patients

All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g hand gloves, face masks and gowns) when caring for patients

- All crew members are expected to wear the designated Personal Protective Equipment (PPE) (e.g hand gloves, face masks and gowns) when caring for patients
- Workers should not work alone at any point in time
- Communication on each in-patient's status must be updated every half hour
- Any omission by an employee to use required safety gear should be immediately reported to the health care supervisor to ensure that decontamination procedures are immediately carried out to avoid possible spread of infection

At the end of each month, any crew with a zero record of injury/incidents gets a free pizza lunch, and is recognized by placing pictures of all members of the crew on the hospital's central notice board. Supervisors of the crew with a zero record of injury/incident are recognized in their annual performance evaluations. Although the hospital policy indicates that the goal is to have zero incidents, the approach to safety violations is usually to temporarily reassign the employees involved and provide feedback to let them know how to improve. Employees are disciplined only if they have repeatedly violated safety policy or if the incident is very serious and results in lost time injury/illness.

In a bid to increase employees' safety motivation, ABC hospital has advised all workers to embrace safety in the workplace and look out for the safety of other members of the crew.

Today you are partnered with Jo, a healthcare worker at ABC hospital. You observed that Jo was trying to restrain a patient without putting on gloves as required. Rather than proceed to carry out the decontamination procedure as required, Jo simply wiped both hands on the curtain that served as a partition in the ward without considering the possible risk of infection that could result from this action. In this situation, what will you do?

1 = Very unlikely
2 = Slightly unlikely
3 = Undecided
4 = Slightly likely
5 = Very likely

1) Ignore the incident.
2) Later in private, call Jordan's attention to the situation.
3) Immediately call the situation to Jordan's attention.
4) Report the incident to your crew supervisor at the end of the shift.
5) Immediately call the situation to the attention of your crew supervisor.
6) Immediately call the situation to Jordan's attention AND report it to your crew supervisor.

Safety Citizenship behavior measure (Hofmann et al, 2003)

Based on the workplace scenario in ABC Hospital provided above, the following statements assess your inclination to participate in safety in the workplace. Please indicate your likelihood to engage or not engage in the behavior outlined in each statement by **selecting a radio button** to the right of the statement, based on the given scale. There are no right or wrong answers.

1 = Never engage in this behavior
2 = Rarely engage in this behavior
3 = Sometimes engage in this behavior
4 = Often engage in this behavior
5 = Always engage in this behavior

If I did this kind of work at ABC, I would probably put effort into participation in safety by:

1. Volunteering for safety committees
2. Helping teach safety procedures to new crew members
3. Assisting others to make sure they perform their work safely
4. Getting involved in safety activities to help my crew work more safely
5. Helping other crew members learn about safe work practices
6. Helping others with safety related responsibilities
7. Making safety-related recommendations about work activities
8. Speaking up and encouraging others to get involved in safety issues
9. Expressing opinions on safety matters even if others disagree
10. Raising safety concerns during planning sessions
11. Protecting fellow crew members from safety hazards
12. Going out of my way to look out for the safety of other crew members

13. Taking action to protect other crew members from risky situations
14. Trying to prevent other crew members from being injured on the job
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		SD	D	SLD	N	SLA	A	SA
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3	No matter whom I am talking to, I am always a good listener.	1	2	3	4	5	6	7
4	I am always willing to admit when I make a mistake.	1	2	3	4	5	6	7
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4 --- Sometimes
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6 --- Almost always
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<u>During the past year, generally you were feeling</u> ...

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___ (02) Ashamed
___ (03) Attentive
___ (04) Afraid
___ (05) Alert

___ (06) Upset
___ (07) Nervous
___ (08) Active
___ (09) Hostile
___ (10) Inspired

Demographic Variables

1. What is your age? _____
2. What is your gender?
   Male
   Female
   Prefer not to say
   Other: _____ (please specify)
3. What is your race? (Please select any option which represents more than 25% of your heritage)
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   Arab/West Asian
   Black/African
   Caucasian
   Chinese
   Filipino
   Japanese
   Korean
   Latin-American
   South-Asian
   South-East Asian
   Other: _____ (please specify)
4. What is the highest level of education you have completed?
   High School or below
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   Trade/Certification
   Bachelors
   Masters
   Doctorate
   In progress (please specify): _____
   Other (please specify): _____
5. Have you been employed in the healthcare sector within the last five years?
   Yes

No

6. How long have you worked in the healthcare sector?
   - Less than two years
   - 2 to 5 years
   - More than 5years
7. What is/was your job title in the health care sector? _____
8. What is/was your level of employment in the healthcare sector
   - Executive
   - Senior Manager
   - Mid-level manager
   - Supervisor
   - Frontline worker