

# **Moderating Effect of Consideration of Future Safety Consequences on the Relationship between Safety Management Practices and Safety Performance among Health care Workers: A Conceptual Analysis**

**Munir Shehu Mashi**

College of Business, Universiti Utara Malaysia, Malaysia (UUM)

06010 Sintok, Kedah Darul Aman Malaysia

Email: Munirshehu@gmail.com

DOI: 10.6007/IJARBS/v4-i6/970 URL: <http://dx.doi.org/10.6007/IJARBS/v4-i6/970>

## **Abstract**

The healthcare workers faced serious challenges while dedicated their lives, providing life-saving services to the patients, such as the risk of contracting infection from blood borne viruses (BBV), mainly contracted through the need stick and splashes of blood into the eye, mouth nose or poor waste management among others. However, relatively few studies have attempted to consider the relationship between safety management practices and safety performance. Even if any, there are inconsistencies in the findings. Hence, a moderating variable is suggested. Despite the effort by management to ensure safety, there are a lot of reports on noncompliance among health care workers. The aim of this paper is to provide a conceptual analysis of the moderating effect of consideration of future safety consequences (CFSC) on the relationship between safety management practices and safety performances in Nigerian hospitals. This conceptual analysis suggests that hospitals that adopt good management practices with individuals of higher CFSC are likely to show higher safety performance. This paper provides a hypothesis that will guide future researchers in the country and offer suggestion for Hospital Administrators to improve safety performance of their organization.

**Keywords:** Consideration of future safety consequences, Safety management practice, healthcare worker, safety performance, Hospitals

## **1. Introduction**

Research on safety performance has received considerable attention across industries worldwide, Manufacturing (Clarke, 2006), construction (Dedobbeleer & Beland, 1991), health care (Gershon, et al., 2000) shipping and transportation (Havold, 2005; Huang, Chen, Krauss, & Rodgers, 2004) and many have been studied across industrial sectors. Occupational accident in the healthcare sector has become a challenging issue; Report shows that of the 35 million healthcare workers (HCWs), 2 million experiences percutaneous exposure to infectious diseases each year and 37.6 percent of Hepatitis B, 39 percent of Hepatitis C and 4.4 percent of HIV/AIDS around the world are due to needle stick injuries. In addition, HCWs incurs two million needle

stick injuries (NSIs) per year that result in infections with hepatitis B and C and HIV/AIDS (World Health Organization, 2008).

Nigeria is faced with this problem as the second country with a massive burden of HIV in Africa, and has the second largest population of people living with the sickness in the world next to South Africa. Similarly, an estimated 3.4 million people are living with the disease for which 21 percent of new infections in children globally (Global Aids Response Progress Report, 2012). Health care workers always have interaction with this person during their work, noncompliance with the necessary protective equipment can put their lives in danger. Moreover, the consequences to the HCWs include: Stigmatization, loss of marriage and lack of ability of infected HCWs to get a husband or wife, the big challenge is suicide as in a case on 2003, a nursing sister at Owerri, Southern Nigeria committed suicide two weeks after she was told she is HIV positive (Nigeria HIV Info, 2006). This can bring a serious shortage of HCWs in the country. Therefore, by looking at the future consequences the HCWs may likely comply with the necessary safety requirements in the hospitals (Probst, Graso, Estrada & Greer, 2013).

Many past studies have empirical evidence the role management practices can play in promoting safety performance behavior of their subordinates (Barling & Hutchinson, 2000; Hofmann, Jacobs & Landy, 1995 ; Neal, Griffin & Hart, 2000). Since management practice plays a pivotal role to ensure employee comply with safety in the organization, this paper attempts to make a provision of a theoretical framework to give an explanation about the relationship between safety management practice and safety performance using consideration for future safety consequences as moderator in Nigerian hospitals.

## **2. Literature review**

### **2.1 Safety performance in the hospital**

Recently, safety performance issue has become a significant issue among Nigerian hospital. Due to recent reports from the Federal Capital Territory Administration (FCTA) that over 100 HCWs suffers from the needle stick injection, Hepatitis B and HIV due to poor hospital waste management (Adejoro, 2014; Obike, 2014). The concept of task and contextual performance proposed by Borman and Motowildo (1993) as a main component of performance. This two component of performance has operationalized by Griffin and Neal (2000) as safety compliance based on the definition of task performance (which describe core safety activities such as wearing personal protecting equipment [PPE]) and safety participation based on the definition of contextual performance which describe behavior such as participation in voluntary safety activities or regular attending of safety meetings.

#### **Safety compliance**

Safety compliance refers to the behavior individuals apply when engaging in core safety tasks such as wearing hand gloves and following safety procedure during their task (Griffin & Neal, 2000). In view of this, HCWs are expected to wear the necessary personal protective equipment such as gloves, gowns, shoe covers, head covers, masks, respirators, eye protection, face shields, and goggles to avoid needle stick injuries and splash of blood into the eye or nose among others.

#### **Safety participation**

Safety participation can be viewed as employee voluntary safety activities in the organization which aims to build supportive environments such as voluntary participation in the safety and

safety related activity (Griffin & Neal, 2000) raising concerns for safety (Mullen, 2005) and promoting safety activities in the organization (Cree & Kelloway, 1997).

## **2.2 Safety management practices**

Safety management is part of the organizational function, which ensures necessary measures are put in place to prevent accident and injuries in the organization. Safety management can be seen as a subsystem of total organization management. This sub-system is a mechanism that is integrated into the organization (Labodova, 2004). Vredenburg (2002) in the study of hospital environment revealed five management practices, worker participation, safety training, management commitment, hiring practices, reward system and safety communication and feedback. Management commitment to safety is one of the major factors contributing to a successful safety program and organization can lower accident rate by constant safety training of its workers (Zohar, 1980). In other related survey, Vinodkumar and Bhasi (2010) found safety training as the most important safety management using the sample of eight major accident hazard units in India. Therefore six dimensions of management practices used by Vinodkumar and Bhasi (2010) applies in this conceptual analysis. These dimensions have empirically proven to improve the capability of employees to reduce accident and injuries and increase safety performance (Ali, Abdullah & Subramaniam, 2009; Vinodkumar & Bhasi, 2010; Vredenburg, 2002).

### **Worker involvement in safety**

Worker participation involves the flow of information upward and decision making process within the organization (Vredenburg, 2002). The main reasons why workers should involve in safety management decision according to European agency for safety and health at work (2012) is that workers participation help in developing ways of protecting workers and help organization to develop measures of preventing occupational accidents in a timely and effective manner.

### **Safety training**

An organization that wants its employees to be active participants in safety activities should give them proper training. Similarly, Safety training can be a means by which accident can be predicted (Vredenburg, 2002). In addition, Providing safety and health training enables workers to know how to work safely and help organization to avoid litigation as a result of an accident.

### **Safety promotion policy**

The organization reward system is the standards, rules and procedures connected with the compensation and allocation of benefits to employees for a job well done and motivation or anything given in recognition of effort or achievements. The reward has a direct impact on desirable behavior when it increases (Geller & wiegard, 2005). Many empirical studies have found rewards can enhance work-related outcomes (khan, 2010; Oluleye, 2010). Within the context of safety, Eiff (1999) found equitable reward system is necessary to motivate individuals to behave safely.

### **Management commitment**

Previous studies identified the importance of management commitment in reducing employee injuries (Brown and Holmes, 1986; Dedobbeleer and Beland, 1991; Niskanen, 1994; Zohar, 1980; & Zohar, 2000). Management's commitment to safety is a main factor which leads to the

attainment of an organization's safety program (Zohar, 1980). This commitment can be apparent through job training programs, consideration of safety in job design, and management participation in safety committees and review of the pace of work.

### **Safety Communication and feedback**

Imparting or exchanging of safety information either by writing, speaking or other means is paramount in an organization. Research by Cox and Cheyne (2000), Mearns, Whitaker, & Flin (2003) and Vredenburg (2002) have shown safety performance is influenced by the capacity and level of communication within the organization. Therefore, safety communication and feedback can be an important safety predictor in organization.

### **Safety rules and procedures**

It is a usual practice in healthcare settings to prepare safety manual which describe the minimum requirements necessary to establish a reasonable level of a safe, functional, supportive and effective environment for patients, workers and other individuals in the hospital. "Well documented safety rules and procedures and its enforcement by supervisors and managers can improve safety behavior of workers" (Vinodkumar & Bhasi, 2010, p. 2084). Similarly, study by Mearns et al. (2003) found a significant correlation between safety rules and procedures and accident rates.

## **2.3 Consideration for future safety consequences**

Compliance with safety performance behavior is associated with long term advantage to the worker and the company or long term consequences (i.e. heart disease, cancer and HIV/AIDS have been long direct effect as a result of behavior that may have over 20 years before the symptom appears). Strnhtman, Gleicher, Boniger and Edwards (1994) opined that consideration of future consequences predicts health and environmental behavior better than any other related construct and argued that in choosing behavior, individuals are likely to consider the distant outcome. In view of this, HCWs may likely to behave safely looking the long time consequences such as stigmatization, discrimination, loss of marriage and lack of ability to get a husband or wife in the future. Probst, Graso, Estrada and Greer (2013) extended the concept of consideration of future consequences to workplace safety and applied it to pulp and paper mill employee in the United State and appeared to be one of the important personality constructs that may predict individuals who are more likely to comply with safety rules and procedures.

## **3. Theoretical framework and research hypothesis**

A number of researchers (Ali et al., 2009; Arboleda et al., 2003; Dorji & Hadikusumo, 2006; Geldart, Smith, Shannon, & Lohfeld, 2010; Mearns et al., 2003) have been emphasizing the importance of management practices in enhancing safety performance. Therefore, there is a need to examine the relationship between management practices, consideration of future safety consequences and safety performance in relation to the growing incidence of needle stick injuries in Nigeria. The proposed theoretical framework is shown in Figure 1.

### **Safety Management practices and safety performance**

Previous studies identified the importance of management commitment in reducing employee injuries (Brown and Holmes, 1986; Dedobbeleer and Beland, 1991; Niskanen, 1994; Zohar, 1980; Zohar, 2000.). Management's commitment to safety is a fundamental factor which leads to the achievement of an organization's safety program and general employee compliance (Zohar, 1980). This commitment can be apparent through job training programs, consideration

of safety in job design, and management participation in safety committees and review of the pace of work. Hence, motivating employee to perform a job in a safe manner is the responsibility of both individual's own concern with safety as well as management's expressed concern for safety (Vredenburg, 2002).

Following studies by Vredenburg (2002), Vinodkumar and Bhasi (2010) and Lu & Yang, (2010), this study also includes management commitment to safety as one of the management practices. Consequently, an organization that is committed to safety is likely to exhibit high safety performance among healthcare workers.

Providing safety and health training to enable workers to know how to work safely and help organization to avoid litigation as a result of an accident. Previous studies have shown that companies with lower accident rates were characterized by adequate employee safety training (Lee, 1998; Ostrom, Wilhelmsen, & Daplan, 1993; Timmannsvik & Hovden, 2003 & Zohar, 1980). Similarly, Safety training can be a means by which accident can be predicted (Vredenburg, 2002).

Worker involvement to safety is important to safety program, the upward communication flow and decision-making processes within the organization especially matters related to safety issues is necessary. (Vredenburg, 2002) proposed that management can seek information from the employees before any final decision about safety, especially in those areas that affect them. Previous studies have found worker involvement as a decisive factor in safety management (Dedobbeleer & Beland, 1991; Lee, 1998; Rundmo, 1994; Shannon et al., 1996). Therefore, involving worker in safety activities is considered vital management practice.

Safety information exchange either by writing, speaking or other medium is paramount within the organization. Organization can communicate safety information through manuals, notice and posters, newsletter, intranet web pages among others. Research by Vredenburg (2002), Cox and Cheyne (2000) and Mearns et al. (2003) showed safety performance is influenced by the capacity and level of communication within the organization. Therefore, safety communication and feedback can be an important safety predictor for the organization.

It is a usual practice in healthcare settings to prepare safety manual which describe the minimum requirements necessary to establish a reasonable level of a safe, functional, supportive and effective environment for patients, workers and other individuals in the hospital. Similarly, "Well documented safety rules and procedures and its enforcement by supervisors and managers can improve safety behavior of workers" (Vinodkumar & Bhasi, 2010, p. 2084). Similar study also by Mearns et al. (2003) has found a significant correlation between safety rules and procedures and accident rates.

The organization reward system is the standards, rules and procedures connected with the compensation and allocation of benefits or to employees for a job well done and motivation or anything given in recognition of effort or achievements. The reward has a direct impact on desirable behavior when it increases (Geller & Wiegard, 2005). Many empirical studies have found rewards can enhance work-related outcomes (Khan, 2010; Oluleye, 2010). In this context, Eiff (1999) has found equitable reward system is necessary to motivate individuals to behave safely. Based on the above, the following hypotheses is proposed:

**H<sub>1</sub>:** *There is a significant positive relationship between safety management practices (management commitment, safety training, safety rules and procedure, communication and feedback, worker involvement and safety promotion policies) and safety performance.*

### **Interaction Effect of consideration of future safety consequences**

This study proposes the moderating effect of consideration of future safety consequences on the relationship between management practices and safety performance. Given that the moderating effect of consideration of future safety consequences in this context has not been previously examined, nondirectional hypotheses is introduced. A non-directional hypothesis is developed when a relationship or differences have never been explored. Thus, the focus is unknown as a result of contradictions among the findings of the involved variables in past studies (Sekaran & Bougie, 2010).

Compliance with safety performance behavior is associated with long term advantage to the worker and the company or long term consequences (i.e. heart disease, cancer and HIV/AIDS have been long direct effect as a result of behavior that may have over 20 years before the symptom appears). Strnthman et al. (1994) concluded that consideration of future consequences predicts health and environmental behavior better than any other related construct and argued that in choosing behavior individuals are likely to consider the distant outcome against immediate outcome. The authors also argued that CFC was a meaningful construct related to individual attitudes and behaviors and developed valid scale for the construct. According to the authors, individual consider the potential distant outcomes of their current behaviors. Study by Joireman, Lasane, Bennett, Richards, & Solaimani (2001) has found that individuals with high CFC are more likely to engage in environmentally conscious behaviors and greater involvement in pro-environmental behavior. From marketing context, Orbell & Kyriakaki (2008) found evidence of CFC as an important moderator of both temporal frame and regulatory focus. Probst et al. (2013) expanded the concept to safety and applied it to the employees of pulp and paper mill in the United State and appeared to be one of the important personality constructs. Thus, when management provide the necessary support in term of regular safety training, carry out safety rules and procedure with effective flow of communication and feedback, involvement of workers in safety activities and create good safety policies. Employees with higher CFSC become more obliged to reciprocate by engaging in the better safety behavior. Hence, the following hypotheses is offered:

*H<sub>2</sub>: Consideration of future safety consequences will moderate the relationship between safety management practices and safety performance.*

#### **4.1 Theoretical implication**

As the focus of most safety research in the hospitals are mainly on the determinant of patient safety (Groves, Meisenbach & Scott-Cawiezell, 2001), this paper is expected to add to the volume of the literature of occupational safety in hospitals by introducing consideration for future safety consequences as moderator between safety management practices and two dimensions of safety performance.

#### **4.2 Practical implication**

The research will also guide researchers and practitioners to identify areas wherethey can improve safety. CFSC might be practically used during the employee selection process and identification of training needs among the current employees in the hospitals.

#### **5. Conclusion**

This paper has presented a model for the potential moderating effect of consideration of future safety consequences on the relationship between safety management practices and safety

performance. Due to the high prevalence rate of HIV/AIDS in Nigeria and Africa in general, there is a need to use CFSC as part of the personality contract to know people with higher CFSC. People with higher CFSC are expected to show a higher level of safety performance and reduce injuries and accident.

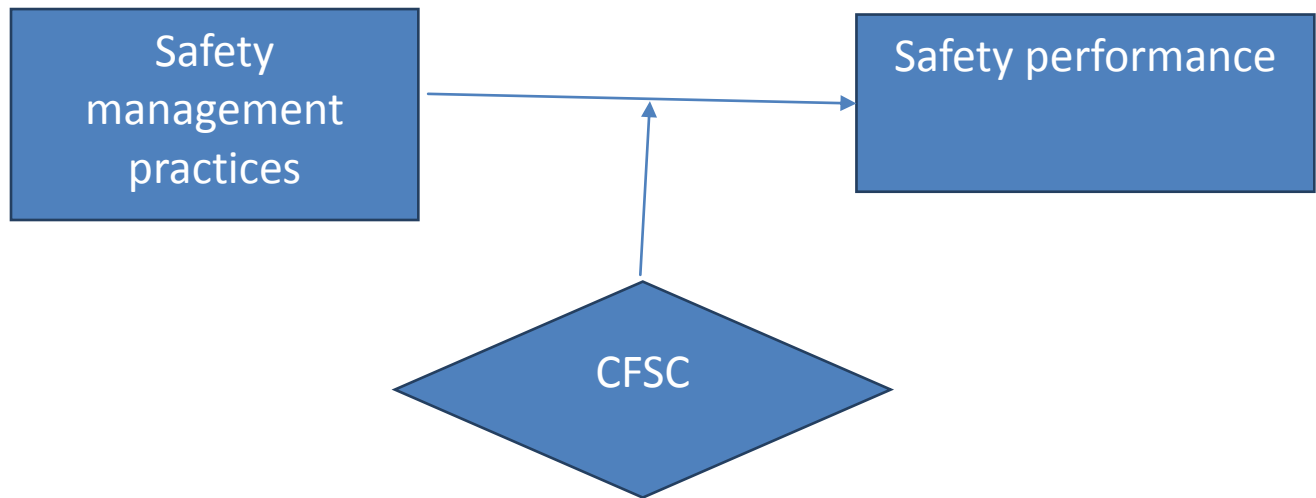
## References

- Adejoro, L. (2014, February 26). 100 healthcare workers suffer from health waste in Abuja. Daily timesng. Retrieved from <http://www.dailytimes.com.ng>.
- Ali, H., Abdullah, N. A., & Subramaniam, C. (2009). Management practice in safety culture and its influence on workplace injury an industrial study in Malaysia. *Disaster Prevention and Management, 18*(5), 470-477.
- Arboleda, A., Morrow, P. C., Crum, M. R., & Shelley, M. C. (2003). Management practices as antecedents of safety culture within the trucking industry: similarities and differences by hierarchical level. *Journal of Safety Research, 34*, 189–197.
- Barling, J., & Hutchinson, I. (2000). Commitment vs. Control-based Safety Practices, Safety Reputation, and Perceived Safety Climate. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 17*(1), 76-84.
- Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. *Personnel selection in organizations, 71*(1993), 98.
- Brown, R. L., & Holmes, H. (1986). The use of a factor-analytic procedure for assessing the validity of an employee safety climate model. *Accident Analysis & Prevention, 18*(6), 455-470.
- Clarke, S. (2006). The relationship between safety climate and safety performance: a meta-analytic review. *Journal of occupational health psychology, 11*(4), 315.
- Cox, S. J., & Cheyne, A. J. T. (2000). Assessing safety culture in offshore environments. *Safety science, 34*(1), 111-129.
- Cree, T., & Kelloway, E. K. (1997). Responses to occupational hazards: Exit and participation. *Journal of Occupational Health Psychology, 2*(4), 304.
- D, Wright T, Thomas D, Seef L: Diagnosis, management and treatment of Hepatitis C. *Hepatology 2004* , 39:1147–1171.
- Dedobbeleer, N., & Béland, F. (1991). A safety climate measure for construction sites. *Journal of Safety Research, 22*(2), 97-103.
- Dorji, K., & Hadikusumo, B. H. (2006). Safety management practices in the bhutanese construction industry. *Journal of Construction in Developing Countries, 11*(2), 53-75.
- Eiff, G. (1999). Organizational safety culture. In *International Symposium on Aviation Psychology, 10<sup>th</sup> Columbus, OH* (pp. 778-783).
- European Agency for safety and health at work. (2012). Worker participation in occupational safety and health retrieved from [https://osha.europa.eu/en/publications/reports/workers-participation-inOSH\\_guide](https://osha.europa.eu/en/publications/reports/workers-participation-inOSH_guide).
- Geldart, S., Smith, C. A., Shannon, H. S., & Lohfeld, L. (2010). Organizational practices and workplace health and safety: A cross-sectional study in manufacturing companies. *Safety Science, 48*(5), 562-569.
- Geller, E. S., & Wiegand, D. M. (2005). People-based safety: Exploring the role of personality in injury prevention. *Professional Safety, 4*, 28- 36.

- Geller, E. S., & Wiegand, D. M. (2005). People-based safety: Exploring the role of personality in injury prevention. *Professional Safety*, 4, 28- 36.
- Gershon, R. R., Karkashian, C. D., Grosch, J. W., Murphy, L. R., Escamilla-Cejudo, A., Flanagan, P. A., Bernacki, E., Kasting, C., & Martin, L. (2000). Hospital safety climate and its relationship with safe work practices and workplace exposure incidents. *American Journal of Infection Control*, 28, 211–221.
- Global AIDS Response Progress report (GARPR). Nigerian GARPR 2012.
- Groves, P. S., Meisenbach, R. J., & Scott-Cawiezell, J. (2011). Keeping patients safe in healthcare organizations: a structuration theory of safety culture. *Journal of advanced nursing*, 67(8), 1846-1855.
- Håvold, J. I. (2005). Safety-culture in a Norwegian shipping company. *Journal of Safety Research*, 36(5) , 441-458.
- Hofmann, D. A., Jacobs, R., & Landy, F. (1995). High reliability process industries: Individual, micro, and macro organizational influences on safety performance. *Journal of Safety Research*, 26(3), 131-149.
- Huang, Y. H., Chen, P. Y., Krauss, A. D., & Rogers, D. A. (2004). Quality of the execution of corporate safety policies and employee safety outcomes: Assessing the moderating role of supervisor safety support and the mediating role of employee safety control. *Journal of Business and Psychology*, 18(4), 483-506.
- Joireman, J. A., Lasane, T. P., Bennett, J., Richards, D., & Solaimani, S. (2001). Integrating social value orientation and the consideration of future consequences within the extended norm activation model of proenvironmental behaviour. *British Journal of Social Psychology*, 40(1), 133-155.
- Khan, M. S. (2010). Effects of human resource management practices on organizational performance an empirical study of oil and gas industry in Pakistan. *European Journal of Economics, Finance and Administrative Sciences* (24), 157-175.
- Labodová, A. (2004). Implementing integrated management systems using a risk analysis based approach. *Journal of Cleaner Production*, 12(6), 571-580.
- Lee, T. (1998). Assessment of safety culture at a nuclear reprocessing plant. *Work and Stress*, 12, 217–237.
- Lu, C. S., & Yang, C. S. (2010). Safety leadership and safety behavior in container terminal operations. *Safety Science* 48, 123–134.
- Mearns, k., Whitaker, S. M., & Flin, R. (2003). Safety climate, safety management practice and safety performance in offshore environments. *Safety Science*, 41, 642-680.
- Mullen, J. (2005). Testing a model of employee willingness to raise safety issues. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 37(4), 273.
- Neal, A., Griffin, M. A., & Hart, P. M. (2000). The impact of organizational climate on safety climate and individual behavior. *Safety Science*, 34(1), 99-109.
- Niskanen, T. (1994). Safety climate in the road administration. *Safety Science*, 17(4), 237-255.
- Obike, .G. (2014, March 11). Policy to protect health workers coming. The nation. Retrieved from <http://thenationonlineng.net/new>.
- Oluleye, F. A. (2010). Reward economics and organization: The issue of effectiveness. *African Journal of Business Management*, 5(4), 1115-1123.



- Oluleye, F. A. (2011). Reward economics and organization: The issue of effectiveness. *African Journal of Business Management*, 5(4), 1115-1123.
- Orbell, S., & Kyriakaki, M. (2008). Temporal framing and persuasion to adopt preventive health behavior: moderating effects of individual differences in consideration of future consequences on sunscreen use. *Health Psychology*, 27(6), 770.
- Ostrom, L., Wilhelmsen, C., & Daplan, B. (1993). Assessing safety culture. *Nuclear Safety*, 34(2), 163–172.
- Probst, T. M., Graso, M., Estrada, A. X., & Greer, S. (2013). Consideration of future safety consequences: A new predictor of employee safety. *Accident Analysis & Prevention*, 55, 124-134.
- Rundmo, T. (1994). Associations between safety and contingency measures and occupational accidents on offshore petroleum platforms. *Scandinavian Journal of Work and Environmental Health*, 20, 128–131.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (5th Ed.). UK: John Wiley & Sons.
- Shannon, H. S., Walters, V., Lewchuk, W., Richardson, J., Moran, L. A., Haines, T., & Verma, D. (1996). Workplace organizational correlates of lost-time accident rates in manufacturing. *American Journal of Industrial Medicine*, 29, 258–268.
- Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: Weighing immediate and distant outcomes of behavior. *Journal of personality and social psychology*, 66(4), 742.
- Tinmannsvik, R., & Hovden, J. (2003). Safety diagnosis criteria – Development and testing. *Safety Science*, 41(7), 575–590.
- Vinodkumar, M. N., & Bhasi, M. (2010). Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis & Prevention*, 42(6), 2082-2093.
- Vredenburg, A. G. (2002). Organizational safety: which management practices are most effective in reducing employee injury rates? *Journal of safety Research*, 33(2), 259-276.
- Wiegand, D. M., & Geller, E. S. (2005). Connecting positive psychology and organizational behavior management: Achievement motivation and the power of positive reinforcement. *Journal of Organizational Behavior Management*, 24(1-2), 3-25.
- World Health Organization. (2008). *Needlestick injuries*. Retrieved from <http://www.who.int/>.
- Zohar, D. (1980). Safety climate in industrial organizations: theoretical and applied implications. *Journal of applied psychology*, 65(1), 96.
- Zohar, D. (2000). A group-level model of safety climate: testing the effect of group climate on micro accidents in manufacturing jobs. *Journal of applied psychology*, 85(4), 587.



The proposed theoretical framework Figure 1.