LEADERSHIP STYLE FOR EFFECTIVE CHANGE OF SAFETY CULTURE

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Abstract
Safety culture concept in the accident occurrence had drawn attention since the Chernobyl disaster in 1986 (Cooper, 2000; Pidgeon & O’Leary, 2000; Harvey, Bolam, Gregory and Erdos, 2001). The poor safety culture and leadership of the organization who are complacent or disinterested in safety, or may not take personal responsibility for the well being of workers and the public were blamed by the report. One of the most essential question arises from the statement above is “which style of leadership is appropriate to change and promote safety culture of an organization?”. The purpose of this paper is to answer the abovementioned question by firstly, examining from the previous research and literature to find some of the accident causation theories searching for evidences that safety culture is related to accident occurrences. The literature review will then progressed to clarify the meaning of safety culture in an organization and some theoretical perspective of leadership style in organizational change. Further the research will continue to identify whether there is any relationship between safety cultures and leadership; and if the relationship exist, which leadership style will be appropriate to promote better safety culture. The result of this study will be useful for safety officers and managers as their guideline to modify their behaviour according to the nature of the subordinates’ job and characteristics.

This paper is organized into three parts; first is the literature review which is divided into three topics, namely theories of accident causation, meaning of safety culture, leadership theories and relationship with safety culture. The second part is the implication of the literature which leads to the conclusion. Finally, the last part of the paper will conclude all the findings into a simple and organized statement to meet the purpose of the paper.

Keywords: Leadership; Safety; Change; Culture.

JEL Classification Codes: J28.

1. Introduction
Safety culture concept in the accident occurrence had drawn attention since the Chernobyl disaster in 1986 (Cooper, 2000; Pidgeon & O’Leary, 2000; Harvey, Bolam, Gregory and Erdos, 2001). The poor safety culture and leadership of the organization who are complacent or disinterested in safety, or may not take personal responsibility for the well being of workers and the public were blamed by the report. The main question arises from the statement above is “which style of leadership is appropriate to change and promote safety culture in an organization?”

The purpose of this paper is to answer the abovementioned question by firstly, examining from the accident causation theories in order to search for evidences that safety culture is related to accident, then to clarify the meaning of safety culture in an organization. Further the research will continue to identify whether there is any relationship between safety cultures with leadership; and if the relationship exist, which leadership style will be appropriate to promote better safety culture. The result of this study will be useful for safety officers and managers as their guideline to modify their behaviour according to the nature of the subordinates’ job and characteristics.

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last part of the paper will conclude all the findings into a simple and organized statement to meet the purpose of the paper.

2. Review of literature

Theories of accident causation

The earliest model of accident causation was the accident proneness which assumes that the individual differences are the main factor of an accident occurrence including visual acuity, reaction time and personality (Hale and Glendon, 1987). However, the model failed to identify the individual traits of accident proneness (Hale and Glendon, 1987; Heinrich, Petersen, and Roos, 1980). Additionally, Petersen (1988) surveys on 35,000 accident records revealed that accident proneness factor only contribute 0.5% of the accident record.

Heinrich (1931) domino theory which asserted that accidents started with ancestry and social environment (1st domino) that will cause personal fault (2nd domino) and subsequently the fault will progressed to an unsafe act/behavior of a person or unsafe condition (3rd domino) which will cause an accident (4th domino) where injury (5th domino) are suffered. He suggested that controlling the 3rd domino (unsafe act/behavior and unsafe condition) is the most effective way to reduce or eliminate accident rate due to his finding that from 75,000 accident records, 88% were caused by unsafe acts/behavior, 10% by unsafe condition and the rest 2% is unfortunate or “wrong place at wrong time”.

Zabetakis (1975) in the energy release theory proposed that the immediate cause of an accident is an unwanted release of energy. This is some kind of technical approach to the analysis of the accident causation which required in-depth understanding of machine mechanism in engineering perspective. Examples of energy released are kinetic energy from rotation, linear movements, explosion energy, electrical energy and others. This theory can be associated to the domino theory because unsafe behaviour or unsafe condition is the trigger of energy release.

These two theories of accident causation seem to be not enough for Peterson (1971, 1988) who suggested the multiple causation theory. He stated that there is more than one factor contributing to every accident and these factors combine together in random fashion causing accident occurrences. He added that the fundamental causes of accidents are related to organizational factors such as management policies, procedures, supervision / leadership and training. Personal and individual factors such as accident proneness, personal behaviour, knowledge, performance, safety awareness as well as unsafe condition such as untidy area, high temperature, slippery floor and others are only symptoms of failure (Peterson 1971, 1988; Heinrich et al., 1980).

The abovementioned multiple causation theory is supported by a longitudinal study by Neal and Griffin (2002) which provide the linkage between organizational factors (safety climate and leadership) and the personal factors of the organization members (safety behaviour, motivation and knowledge). They agreed that personal factor act as an indicator of organizational performance (or symptom of failure).

The linkage between organizational factor and personal factor is further strengthen by the fact that the “hidden part of the iceberg” (Senior and Fleming, 2006) which is the informal part of an organization such as culture, politics and leadership, is a powerful driver of decision making and actions of the leaders and members within an organization.

The Meaning of Safety Culture

The interest in concept of safety culture has been increasing among the safety researchers as they attempted to define and operationalize the concept. The term safety culture is used to describe the environment in which safety is a high priority. It is a set of beliefs, norms, attitudes, roles and the social and technical practices that are concerned with minimizing the exposure of employees, managers, customers and members of the public to conditions considered dangerous or injurious (Cooper, 2002).

Throughout this paper, I will treat the safety culture and safety climate as a similar concept because possible differences between the culture and climate concepts in safety research seem insufficient to support their independence (Cox and Flin, 1998).
Furthermore, both concepts are related to the organizational factors of multiple causation theory (Peterson, 1971, 1988) where safety climate can be seen as the manifestation of safety culture in an organization. Safety climate is the superficial or visible part (Glendon & Stanton, 2000; Flin, Mearns and Bryden, 2000; Guldenmund, 2000, Cheyne, Cox, Oliver and Thomas, 1998) which is observable from the personal attitude, behavior and practice of the organization members. This visible part, when accepted and shared by overall members of the organization, will reflect the values, norms, beliefs (perception), assumption (thinking) and expectation which is the invisible part (Guldenmund, 2000) or the safety culture of an organization.

Certain organizations have an emphasis on safety within the organization culture especially in high-risk industries such as power distribution plant, but sometimes different subcultures of safety may exist. In the study of the effectiveness of training to change the safety culture and attitudes within a highly regulated environment, Harvey et al. (2001) found two subcultures exist in an organization, which is hierarchical and fatalist subcultures. A study was conducted in which shop floor employees’ and managers’ subcultures were studied to determine if they operated within a common safety culture. The shop floor employees exhibited two different subcultures. The hierarchical subculture was focused on compliance and action through downward instructions whereas the fatalist subculture accepted the world as unpredictable and made choices about whether to avoid hazards or to take the risk. Interestingly the researchers confirmed the existence of a management safety subculture separate and apart from the employees’ subculture.

The findings that multiple safety subcultures exist within one organization are generalizable to other industries such as manufacturing, services and trading industries. For example, in the company I am working currently which is an educational industry, I found that people in the marketing and finance have less awareness about the importance of occupational safety compared to those working in the workshops and labs frequently talk about safety in most of their conversation.

**Leadership Theories And Relationship To Safety Culture**

Wright (cited in Senior and Fleming, 2006) in 1996, found that there are four main leadership styles of behavior which are (a) the leader’s concern for task which sometimes referred as concern for production, production centered, task oriented or task-centered leadership (b) the leader’s concern for people sometimes called person-centered, person-oriented, employee-centered leadership) (c) directive leadership or authoritarian leadership or autocratic leadership, (d) participative leadership or democratic leadership. He also found that there is no single style which is most appropriate to all situations.

Litwin and Stinger (cited in Dunbar 1975) in 1968 has associated leadership style with the organizational culture. They associated directive leadership with a more structured, controlled, formal, aloof, isolate and have lowest personal responsibility (safety awareness) organizational culture. The participative leadership in an affiliative organization and laissez-faire leadership in an achievement oriented organization were associated with rewarding, supportive and highest personal responsibility organizational culture. However the achievement oriented organization might have the highest self responsibility (safety awareness) among all whereas in the affiliative organization, the responsibility culture is decreased among managers and increased among employees.

Dunbar (1975) study was conducted on two groups of forklift truck operators who worked under different supportive managers (can be categorized as participative or democratic managers) within the same warehouse. Result shows that if managers responded faster to requests and suggestions about safety, the subordinates will perceived that they have less chance to face an accident. However, Dunbar (1975) did not relate this finding to any safety performance indicator to show how his finding may improve the safety performance to an individual or organization.

Fuller (1999) has demonstrated that change change of leadership style from directive to participative has an indirect impact on organizational culture through the change in the employee’s concerns about safety related matters. In his study, Fuller (1999) had successfully changed the managers’ leadership style of a UK international oil company distribution division, from authoritarian to participative and employee-centered leadership had resulted a increase in subordinates safety awareness and they became more creative to
identify areas of improvement related to safety.

Beside the four leadership styles of behavior, Senior and Fleming (2006) identified two more styles of leadership, which are transactional leadership transformational leadership which had received much attention (Senior and Fleming, 2006).

The transformational leaders have been characterized by the 4Is, including idealized influence (charisma), inspirational motivation, intellectual stimulation, and individualized consideration. Transformational leaders integrate creative insight, persistence and energy, intuition and sensitivity to the need of the followers (Bass, 1999). A lot of data support the effectiveness of transformational leadership (Bass, 1985, 1998) in enhancing employee attitudes and performance. They generate awareness and acceptance of the purposes and mission of the group by looking beyond their self-interest for the good of the group (Bass, 1990). Transformational leaders make major changes in the organization’s mission, structure and human resource management as well as evoking fundamental changes in the basic political and cultural systems of the organization (Tichy and Ulrich, 1984 in Senior and Fleming, 2006). I believe that transactional and transformational leadership main task is to change the subordinates from being internal locus controlled to external locus controlled. The transactional leaders organize the subordinates’ tasks so that their job carried out reliably and efficiently, whereas the transformational leaders role has to develop and inspire the subordinate to be more self responsible and committed to more challenging goals. In a simple word, the transactional leaders insist for reliability to expected performance, while transformational leadership promotes motivation and performance beyond expectations (Zohar, 2002)

The transactional leaders are characterized by contingent reward, management by exception and laissez-faire styles of leadership (Bass, 1990). They develop exchanges or agreements with their followers, pointing out what the followers will receive if they do something right as well as wrong. They work within the existing culture, framing their decisions. (Zohar, 1999). The transactional managers only make minor adjustment in the organization’s mission, structure and human resource management (Tichy and Ulrich, 1984 in Senior and Fleming, 2006).

Zohar’s (1999) demonstrate the effect of transactional leadership to different group of workers in a manufacturing plant which their nature of job required occasional changes of tasks and materials. He utilized microaccidents record as an indicator of the performance of the safety culture. The climate perceptions in this case were related to supervisory safety practices instead of company policies and procedures. The result shows that there are homogenity of safety performance within the same group which reflects that the group leader supervisory safety practice plays an important role to pattern the subordinate’s safety culture and safety performance. The variance exist between group (different safety culture) indicates that different supervisory practice have different effect on the safety performance.

Barling, Loughlin, and Kelloway (2002) is among those who are interested in studying the relationship between transformational leadership style and occupational safety performance. Barling et al. (2002) demonstrated that safety-specific transformational leadership and role overload were related to occupational injuries through the effects of perceived safety climate, safety consciousness and safety-related events.

Further Zohar (2002) combined both transactional and transformational leadership style and link them to the occupational safety performance. The study revealed that both transactional and transformational leadership should be combined according to the nature of task, followers and and policies of the organization.

3. Conclusion
The variety of theories of the accident causation, from individual factor of accident proneness theory (Hale and Glendon, 1987) to the chain of events leading to accident occurrence in the domino theory (Heinrich, 1980) and finally the integration of multiple factors in random fashion of multiple causation theory
(Peterson, 1931) has drawn my interest. I would like to suggest a modification of the domino theory by changing the five dominos and rearrange them to a new sequence logically progressed to injury. This modification also integrates the multiple causation theory which claimed organizational factors (1st domino) including safety culture (Cooper, 2000; Pidgeon and O’larry, 2000; Harvey et al., 2001; Barling et al., 2002) and leadership style (Dunbar, 1975; Fuller, 1999; Zohar, 1999, 2002) to be the primary cause of accident (Petersen, 1988). These organizational factors will result adjustment and modification of individual factor such as knowledge, behavior, motivation, and perception (2nd domino). The 2nd domino, if not in line with the safety policy and practice of the organization, will create unsafe condition (3rd domino) at the workplace. This 3rd domino will then trigger fault (4th domino) in the work environment or machine mechanism and subsequently causing accident (5th domino) resulting injuries (6th domino) among workers. This implies that accident can be avoided indirectly through a proper management of personal factors such as procedures and regulation. Low safety awareness and unsafe condition at the workplace is regarded as symptom of failure.

Leadership style and safety culture, which are the first domino in my modified theory of domino, are considered as two important elements of informal organization environment (Senior And Fleming, 2006). Safety culture (Dunbar, 1975; Fuller, 1999; Cooper, 2000; Pidgeon and O’larry, 2000; Harvey et al., 2001; Barling et al., 2002) can be changed through influence of leadership style (Dunbar 1975; Fuller, 1999; Zohar, 1999, 2002) and monitored from the performance of the subordinates’ safety awareness (Dunbar 1975; Fuller, 1999) and accident rates (Zohar, 1999, 2002). This review of literature has revealed several leadership styles which are preferred by most literature in the occupational safety area, including participative (democratic) leadership and employee-centered leadership (Dunbar, 1975; Fuller, 1999) which further categorized into transactional leadership and transformational leadership (Bass, 1990; Zohar 1999, 2002). Both transformational and transactional leadership should be combined to meet the nature of task (level of hazards exposure), follower (locus of control) and policies of the organization (Zohar, 2002).

There is no single ideal leadership style to promote the safety culture in organization. Both transformational and transactional leadership should be combined and adopted together suitable to the nature of task, follower and policies, to enhance the safety culture of an organization.

References


