

STRENGTHENING THE SAFETY CULTURE FOR ORGANIZATIONAL SUSTAINABILITY

N. H. C. Manjula* and Nayanthara De Silva

Department of Building Economics, University of Moratuwa, Sri Lanka

ABSTRACT

The term 'sustainable development' can be defined as satisfying the needs of the current generation, without jeopardizing the future generation's ability to meet their needs. In terms of organizations, a Sustainable organization concerns the original momentum of the business continuity of the organization. Occupational Safety and Health (OSH) in general plays a key role in supporting business activities and delivering economic prosperity for the organization. Thus, OSH becomes a necessity for organizational sustainability. Organisational culture is a concept often used to describe shared corporate values that affect and influence members' attitudes and behaviours. Safety culture is a sub-facet of organizational culture, which is thought to affect members' attitudes and behaviour in relation to an organisation's ongoing safety and health performance. This paper aims to investigate the factors that influence safety culture positively in order to support the sustainability of the organization. A literature synthesis on organizational sustainability, occupational safety and health, safety culture, definitions of safety culture, components of safety culture and way to strengthen a safety culture are presented. The research findings highlighted that a safety culture mainly comprises of three components, namely, attitudes-both individual and organizational, work environment of and OSH systems occupied. Further few factors that influence safety culture positively were distinguished as management commitment to OSH, employee involvement and empowerment, proper OSH systems and feedback mechanisms, and continuous monitoring of OSH systems.

Keywords: Occupational Safety and Health, Safety Culture, Sustainable Organizations.

1. INTRODUCTION

Today, many authors refer to the sustainability concept as ambiguous and subject to debate or controversy; even though, there is consensus that, in general, sustainability refers to the ability or capacity to endure (Broekhuis and Vos, 2003; Giannettia *et al.*, 2010; Geelsa, 2010). On the other hand, sustainability associated with the development concept, turns to be a new archetype of social, environmental, and economic development which has started to spread globally during the past decade (Brundtland, 1987). An 'organizational sustainability' concerns the original momentum of the business continuity. There by, 'sustainability' and 'sustainable development' has become a topic that continues to gain the attention of safety, health, and environmental (SHE) professionals (Taubitz, 2010). However, most organizations consider occupational safety to be a secondary concern. This may be due to the fact that safety is focused mainly on tactical issues of OSHA (Occupational Safety Health Administration) recordkeeping, accident reporting, personal protective equipment, and other elements that, while necessary, do not resonate as part of long-term strategic initiatives, but the contribution these 'tactical issues' bestow to maintain the environment of a organization sustainable is often been overlooked (Taubitz, 2010). Thus, lack of conversation on safety and health is evident when sustainability is discussed. 'Safety culture' is frequently identified as being fundamental to an organization's ability to manage safety-related aspects of its operations, successfully or otherwise (Glendon and Stanton, 2000). Cooper (1998) established that a safety culture has impact on an organization's quality, reliability, competitiveness and profitability. Thereby, the need to develop and promote a strong safety culture for sustainability of organizations is acknowledged. With that

*Corresponding Author: e-mail - chathuri9m@gmail.com

acknowledgement, the paper discusses on the link between occupational safety and health and organizational sustainability through the concept of ‘safety culture’.

2. RESEARCH METHOD

A comprehensive literature review was carried out. A keyword search for sustainable organizations, occupational safety and health, and safety culture were used to search literature from various sources such as electronic library data base, journal articles, online journals, e-books, web sites and other publications. The findings of the literature review is structured and presented under appropriate sections.

3. ORGANIZATIONAL SUSTAINABILITY

Sustainable organizations are enduringly successful - yet not all successful organizations will endure or are sustainable (Chartered Quality Institute, 2011). Organizational sustainability means managing the ‘triple bottom line’- including financial, social, and environmental risks, obligations and opportunities (Smith, 2010). Therefore, sustainable organizations are generally resilient and create economic value, healthy ecosystems and strong communities. Further, this nature of organizations survives over a long period, as they are intimately connected to healthy economic, social and environmental systems. As a result, the sustainability movement exhibits strong parallels to the safety health and ethical conduct movements of years past. Management of Occupational Safety and Health (OSH) in organizations has become a very complex multi-functional science within operations management and Total Quality Management (TQM). It focuses on a non-legalistic approach whereby the organisational culture fosters spontaneous OSH and a high quality of work life (Steenkamp and Schoor, 2012). Thus, it is apparent that OSH does play a role in attaining better quality working life and ultimately the organizational sustainability. Further, according to the Joint ILO/WHO Committee on Occupational Health in 1950, the main focus in OSH is on three different objectives (Coppee, 2011):

- (i) the maintenance and promotion of workers’ health and working capacity;
- (ii) the improvement of working environment and work to become conducive to safety and health
- (iii) development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings.

This has led to establish a relationship between sustainability and OSH. It suggests that in order to have a smooth and productive operational process, an organization should have a safe and healthy work environment. Hence, sustainability is supported and enhanced by OSH. The next section of this paper is thus devoted to discuss OSH.

4. OCCUPATIONAL SAFETY AND HEALTH (OSH)

Occupational health and safety encompasses the social, mental and physical well-being of workers that is the whole person (Alli, 2008). Thus, successful occupational health and safety practice requires the collaboration and participation of both employers and workers in health and safety programmes, and involves the consideration of issues relating to occupational medicine, industrial hygiene, toxicology, education, engineering safety, ergonomics, psychology, etc.(ILO, 1996).The ultimate goal is an organisation aiming to improve its health and safety performance, so that accidents and ill health are eliminated and work forms part of a satisfying life to the benefit of both the individual and the organisation (HSE, 1997). OSH systems are designed to identify and minimise risks at the workplace. The effectiveness of such systems also affects business performance, either in a negative way if these systems are cumbersome or bureaucratic, or positively if they are well designed and function effectively. To have a positive impact, OSH systems need to function smoothly, in tune with, rather

than in contradiction to, the overall management of the company (EU-OSHA, 2012). Further, as identified in the literature, OSH contributes to organization performance by (Cooper, 1998; HSE, 1997)

- Supporting human resource development;
- Minimizing the financial losses which arise from avoidable unplanned events;
- Recognizing that accidents, ill health and incidents result from failings in management control and are not necessarily the fault of individual employees;
- Recognizing that the development of a culture supportive of health and safety is necessary to achieve adequate control over risks;
- Ensuring a systematic approach to the identification of risks and the allocation of resources to control them;
- Supporting quality initiatives aimed at continuous improvement.

Thus, safe and healthy workplaces help businesses and organizations to succeed and prosper, and also benefit wider society. Safety and health at work have traditionally been approached mainly by means of legislation and enforcement measures. He stated that there is enough evidence to indicate that an effective safety culture is an essential element of any business strategy, as it has so many positive effects on other areas of business performance. Therefore, promoting a positive safety culture appears to be the best way to ensure healthy, safe as well as productive work environments.

5. SAFETY CULTURE

The concept of Safety Culture came into international usage following a report by the International Atomic Energy Agency (IAEA) in 1991, after the Chernobyl accident (Flin *et al.*, 2000) which led to safety culture being defined as an organizational atmosphere where safety and health is understood to be, and is accepted as, the number one priority. Since then, a number of organizations and researchers have developed the concept, applying it more widely to non-nuclear industries and linking it to the need for preventative approaches to OSH and to human and behavioural aspects of effective OSH management (ILO, 2005).

5.1. DEFINING SAFETY CULTURE

A safety culture generally refers to the extent to which every individual and every group of the organization is aware of the risks and unknown hazards induced by its activities; is continuously behaving so as to preserve and enhance safety; is willing and able to adapt itself when facing safety issues; is willing to communicate safety issues; and consistently evaluates safety related behaviour. The term is loosely used to describe the corporate atmosphere or culture in which safety is understood to be, and is accepted as, the number one priority (Cullen, 1990). Numerous definitions of safety culture exist in the academic literature, and examples of selected definitions are shown in Table 1.

Table 1: Definitions of safety culture

Reference	Definition
Kennedy and Kirwan (1998)	An abstract concept, which is underpinned by the amalgamation of individual and group perceptions, thought processes, feelings and behaviours, which in turn gives rise to the particular way of doing things in the organization. It is a sub-element of the overall organizational culture
Hale (2000)	Refers to ‘the attitudes, beliefs and perceptions shared by natural groups as defining norms and values, which determine how they act and react in relation to risks and risk control systems’

Reference	Definition
Glendon and Stanton (2000)	Comprises attitudes, behaviours, norms and values, personal responsibilities as well as human resources features such as training and development
Guldenmund (2000)	Those aspects of the organizational culture which will impact on attitudes and behaviour related to increasing or decreasing risk
Cooper (2000)	Culture is ‘the product of multiple goal-directed interactions between people (psychological), jobs (behavioural) and the organization (situational); while safety culture is ‘that observable degree of effort by which all organizational members directs their attention and actions toward improving safety on a daily basis’
Mohamed (2003)	A sub facet of organizational culture, which affects workers’ attitudes and behaviour in relation to an organization’s on-going safety performance
Richter and Koch (2004)	Shared and learned meanings, experiences and interpretations of work and safety - expressed partially symbolically – which guide people’s actions towards risk, accidents and prevention
Fang <i>et al.</i> (2006)	A set of prevailing indicators, beliefs and values that the organization owns in safety

As a summary of above definitions, safety culture is a subset of the corporate organizational culture that includes a set of enduring values and attitudes regarding safety issues, shared by every member of every level of an organization. In a more descriptive elaboration safety culture can be regarded as "the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization’s health and safety management" (HSC, 1993, p. 23).

The concept of safety culture is often presented separately from an organization’s other characteristics, such as the work schedule, technology, business strategy and financial decision-making (Reiman and Oedewald, 2004). Reiman and Oedewald (2004) revealed that this conceptual separation of safety culture reduces the term to refer only to factors that are clearly connected with safety, such as safety attitudes and safety values.

5.2. COMPONENTS OF SAFETY CULTURE

Creating a robust safety culture is about more than removing hazards and institutionalizing safety procedures. It’s about working with people to change their attitudes, behaviours and thoughts, and improve their situational awareness - all within the dynamics of today’s world. Ardern (2009) illustrated three areas to be considered when developing a safety culture, attitude, environment and systems (Figure 1). According to Ardern (2009), attitudes, both personal and organizational, affect development of a safety culture in a workplace. The environment in which people work and the systems and processes in an organization also influence the safety culture. Therefore, each organization needs to consider all of these aspects in developing and nurturing a safety culture that suits the organization and the individuals within it.

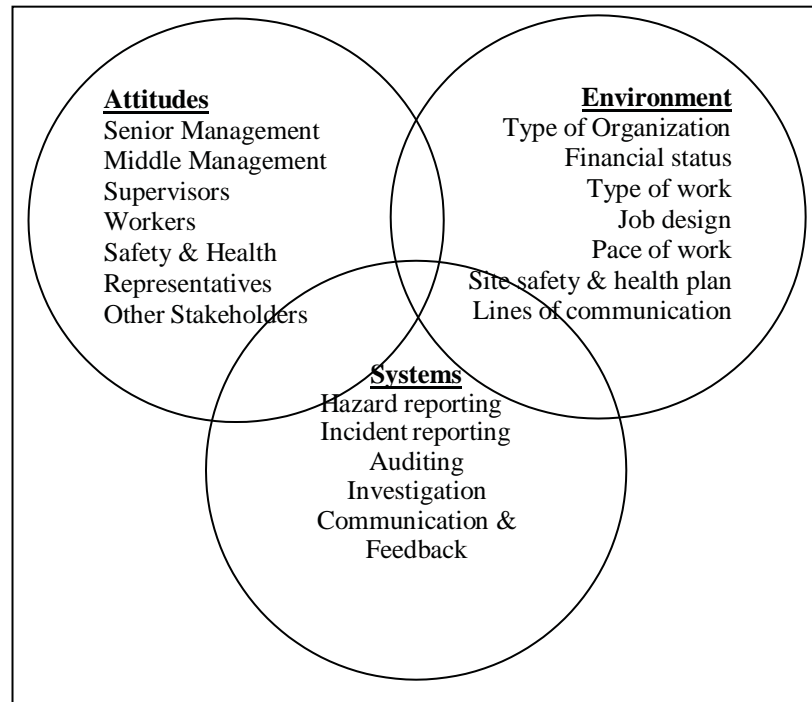


Figure 1: Components of Safety Culture
(Source: Arden, 2009)

6. STRENGTHENING THE SAFETY CULTURE

Strong a safety culture can be an effective tool for improving safety within any organization (Vecchio-Sudus and Griffiths, 2004). Hale (2000) has listed a number of elements for a strong safety culture. These include importance to safety; involvement of workers at all levels; role of safety staff; the caring trust (that all parties to have a watchful eye and helping hand to cope with inevitable slips and blunders); openness in communication; belief in safety improvements; and integration of safety in to the organization. Vecchio-Sudus and Griffiths (2004) also reviewed strategies to strengthen and further promote a safety culture. They identified six strategies altogether as follows;

- (1) *Changing attitudes and behaviours:* Safe behaviours can be enhanced by capitalizing on activities such as verbal instructions, training, and warning signs. Nevertheless, if things are communicated in the way that the work is easier, and the task can be finished earlier and thus rewarded with monetary incentive, then certainly employees will be cutting corners, may not be observing safety rules, not wearing personal protective equipment, and ultimately not working safely. Long-term values include employees being able to work without injury so they can continue to provide earning for both the company and for her/his family.
- (2) *Management commitment:* Management plays a key role in promoting a positive safety culture. This can be best demonstrated by allocating resources, time, walk the talk, inspections, by participating in risk assessments and consultative committee meetings, and by completing actions.
- (3) *Employee involvement:* For a positive safety culture, employees' involvement, ownership and commitment is necessary; in particular empowerment promotes feelings of self-worth, belonging and value. Employees should be involved in training, consultation about noise, machinery isolation, sound barriers, job rotation, PPE, and wearing different earmuffs.

- (4) *Promotional strategies*: In order to enhance safety awareness amongst employees, promotional strategies to be used should include the following:
 - (i) Mission statements, slogans and logos;
 - (ii) Publish materials (library, statistics, newsletters);
 - (iii) Media (posters, displays, audiovisual, e-mail, Internet).
- (5) *Training and Seminars*: Training activities should include short talks, group meetings, training for personal fitness, hygiene, workplace stress and responsibilities towards safety (including compliance with rules and regulations, hazard identification and risk assessment, incident investigation and job safety analysis). De Silva and Wimalaratne (2012) recognized three aspects in this regard such as, Implementation of OSH policies and programmes, Site specific OSH programmes, and OSH education: orientation and specialized training.
- (6) *Special campaigns*: This item should include Health and Safety Week, health promotion, safety inductions, emergency response, incident reporting and investigation, risk assessment, introduction to existing health, safety and environment management systems.

Further, De Silva and Wimalaratne (2012) identified eight strategies, namely (1) *OSH meetings*, (2) *Soliciting the involvement of the workers for OSH decision making*, (3) *OSH incentive programmes*, (4) *Safety operations and proper time management* (5) *Identification and monitoring of work pressure*, (6) *OSH inspections*, (7) *Proactive performance measurement*, and (8) *Introducing a set of OSH rules to the site*, to enhance the safety culture in an organization.

Moreover, Choudhry *et al.* (2007) asserted that a positive safety culture comprises of five components which include: *management commitment to safety; management concerns for the workforce; mutual trust and credibility between management and employees; workforce empowerment; and lastly continuous monitoring*, corrective action, review of system and continual improvements to reflect the safety at the organization. In another research conducted by Pidgeon and O’Leary (2000), the authors argued that a good safety culture may be promoted by four factors: (1) *Senior management commitment to safety*; (2) *Realistic and flexible customs and practices for handling both well-defined and ill-defined hazards*; (3) *Continuous organisational learning through practices such as feedback systems, monitoring and analysing*; and a (4) *Care and concern for hazards which is shared across the workforce*.

When comparing these factors identified by different authors, it can be observed that they, with slight overlaps among them, do point at the same direction. Management commitment to OSH, employee involvement and empowerment, proper OSH systems and feedback mechanisms, continuous monitoring of OSH systems can be identified as the most important factors that help to strengthen the safety culture with in a organization and ultimately help it to be sustainable n the long run.

7. CONCLUSIONS

This paper reviewed the existing literature on organizational sustainability, OSH and safety culture and provided essential clarification by providing appropriate empirical evidence and theoretical development. The responsibility for providing and building the necessary OSH culture, which goes beyond just preventing injuries in the construction sites, is a shared duty among the stakeholders.

Over the years, management of occupational safety and health (OSH) in organizations has become a very complex multi-functional science that focus not only on safety and health of the employees but also on supporting quality initiatives aimed at continuous improvement of the organization, hence the organizational sustainability. Though safety and health at work have traditionally been approached mainly by means of legislation and enforcement measures, researchers have identified ‘safety culture’ as the best way to promote OSH within an organization (Pidgeon and O’Leary 2000; Vecchio-Sudus and Griffiths, 2004). The concept of safety culture has been researched by many authors (Hale, 2000; Mohamed, 2003; Fang *et al.*, 2006). They agree that safety culture refers to a set of enduring values

and attitudes regarding safety issues, shared by every member of every level of an organization. This study revealed that safety culture consists of three main components, namely, attitudes- both individual and organizational, environment of the organization and OSH systems occupied by the organization. The study further demonstrated that strengthening the safety culture can be an effective tool for improving sustainability of the organization. Factors that influence strong safety culture identified under the final section of the paper were Management commitment to OSH, employee involvement and empowerment, proper OSH systems and feedback mechanisms, and continuous monitoring of OSH systems.

As a concluding remark, according to the literature findings, within a strong safety culture, employees not only feel responsible for their own safety, but are responsible for their peers' safety, and the organizational culture supports them acting on their responsibility. Within a strong safety culture, the organization's formal management systems and leaders' informal management practices facilitate caring by encouraging, recognizing, and reinforcing safe behaviours. These characteristics may lead the organization to achieve best quality working environments and thereby help the organization to be sustainable as a firm. So it is established that OSH and organizational sustainability are two concepts that are not by far discrete as they first appear to be and it can be asserted that OSH is an important aspect for any organization that seeks to be sustainable.

8. REFERENCES

- Alli, B. O., 2008. *Fundamental principles of occupational health and safety*. 2nd ed. Geneva: International Labour Office.
- Ardern, J., 2009. *Creating a safety culture*, Perth Work Safe 2009 Forum, Australia
- Broekhuis, M. and Vos, J. F. J., 2003, *Improving Organizational Sustainability Using a Quality Perspective* [online]. University of Groningen, Research Institute SOM. Available from: <http://ideas.repec.org/s/dgr/rugsom.html>. [Accessed 17 April 2013]
- Brundtland, G. H., 1987. *Our Common Future*. Oxford: Oxford University Press.
- Chartered Quality Institute, 2011. *Model of sustainable organization* [online]. Available from: <http://www.thecqi.org/Community/Special-Interest-Groups-SIGs/Deming-SIG/The-Sustainable-Organisation/> [Accessed 20th April 2013]
- Choudhry, R.M., Fang, D. and Mohamed, S., 2006. The nature of safety culture: A survey of the state-of-the-art. *Safety Science*, 45(2007), 993–1012.
- Cooper, D., 1998. *Improving Safety Culture: A Practical Guide*. 1st ed. London: John Wiley & Sons Ltd.
- Cooper, M. D., 2000. Towards a model of safety culture. *Safety Science*, 36, 111–136.
- Coppee, G. H., 2011. *Occupational health services and practices* [online]. ILO Encyclopedia on Occupational Health and Safety. Available from: <http://www.ilo.org/oshenc/part-ii/occupational-health-services/item/155-occupational-health-services-and-practice> [Accessed 17 April 2013]
- Cullen, W. D., 1990. *The public inquiry into the piper alphas disaster*. London: HMSO
- De Silva, N. and Wimalaratne, P.L.I., 2012. OSH management framework for workers at construction sites in Sri Lanka. *Engineering, construction and architectural management*, 19(4), 369 – 392.
- European Agency for Safety and Health at Work, 2012. *Management leadership in occupational safety and health: a practical guide* [online]. Available from: https://osha.europa.eu/en/publications/reports/management-leadership-in-OSH_guide [Accessed 19 April 2013]
- Fang, D. P., Chen, Y. and Louisa, W., 2006. Safety climate in construction industry: a case study in Hong Kong. *Journal of Construction Engineering and Management*, 132 (6), 573–584.
- Flin, R., Mearns, K., O'conner, P. and Bryden, R., 2000. Measuring safety Climate: Identifying the common features. *Safety Science*, 34, 177-192.
- Geelsa, F. W., 2010. Ontologies, socio-technical transitions (to sustainability), and the multi-level perspective. *Research Policy*, 39(4), 495-510.

- Giannettia, B. F., Almeida, C. M. V. B. and Bonilla, S. H., 2010. Comparing energy accounting with well-known sustainability metrics: The case of Southern Cone Common Market, Mercosur. *Energy Policy*, 38, (7), 3518-3526.
- Glendon, A. I. and Stanton, N. A., 2000. Perspectives on safety culture. *Safety Science*, 34, 193–214.
- Guldenmund, F. W., 2000. The nature of safety culture: a review of theory and research. *Safety Science*, 34, 215–257.
- Hale, A. R., 2000. Editorial: culture's confusions. *Safety Science*, 34, 1–14.
- Health and Safety Commission, 1993. *Third Report: Organizing for Safety*. ACSNI Study Group on Human Factors. HMSO: London.
- Health and Safety Executive, 1997. *Successful health and safety management*. 2nd ed. Sudbury: HSE Books
- International Labour Organization, 1996. *Introduction to occupational health and safety* [online], Available from: <http://actrav.ilo.org/actrav-english/telearn/osh/intro/introduc.htm> [Accessed 12 April 2013]
- International Labour Organization, 2005. *Promotional framework for occupational safety and health*, Report VI(I), International Labour Conference, 91st Session, Geneva.
- Kennedy, R., Kirwan, B., 1998. Development of a hazard and operability-based method for identifying safety management vulnerabilities in high risk systems. *Safety Science*, 30, 249–274.
- Mohamed, S., 2003. Scorecard approach to benchmarking organizational safety culture in construction. *Journal of Construction Engineering and Management*, 129 (1), 80–88.
- Pidgeon, N. and O'Leary, M., 2000. Man-made disasters: why technology and organizations (sometimes) fail. *Safety Science*, 34, 15-30
- Reiman, T. and Oedewald, P., 2004. Measuring maintenance culture and maintenance core task with CULTURE-questionnaire – a case study in the power industry. *Safety Science*, 42, 859–889.
- Richter, A. and Koch, C., 2004. Integration, differentiation and ambiguity in safety cultures. *Safety Science*, 42, 703–722.
- Smith, R. W., 2010. *Understanding and linking sustainability for healthcare* [online]. Available from: http://www.johnsoncontrols.com/content/dam/WWW/jci/be/solutions_for_your/healthcare/case_studies/SustainHcare_wp_FINAL.pdf [Accessed 20th April 2013]
- Steenkamp, R. and Schoor, A., 2012. *Occupational safety and health (OSH): a TQM and quality of work life approach*. South Africa: Juta Legal and Academic Publishers
- Taubitz, M., 2012. How Safety Fits with Sustainability. *Occupational Health & Safety*, 79(9), 18-19.
- Vecchio-Sudus, A. M. and Griffiths, S., 2004. Marketing strategies for enhancing safety culture. *Safety Science*, 42, 601– 619.