

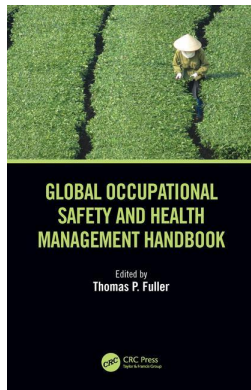
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Thomas P. Fuller

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4 Cultural Issues in International Occupational Safety and Health

Thomas P. Fuller
Illinois State University

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4.1 INTRODUCTION

The globalization of business and industry in the past decades has led to increasingly complex supply chains that have introduced new and increased risks to workers and employers. Globalization has also caused large increases in the numbers of people traveling across international boundaries on a regular basis to perform their work. These workers then interact with a broad range of people from other cultures, often working side-by-side on projects. Managers of global companies and joint ventures may have large groups of new local employees that they will need to communicate with and motivate, to reach organizational objectives and goals. The managers of occupational safety and health (OSH) programs need to consider the culture of employees in order to fully develop a culture of safety within the regional operations. This chapter provides a discussion of what safety culture and climate are, and how national cultures might influence and shape the corporate safety cultures necessary to reach organizational goals.

4.2 SAFETY CULTURE DEFINED

Culture can be defined as similar ways of thinking and behaving demonstrated by members of a social group (Rousseau, 1988).

An organizational culture is the embodiment of certain values, beliefs, and underlying assumptions about how the organization operates (Fahlbruch, 1999). It encompasses a wide variety of phenomena to include behavior, values, norms, patterns of behavior, attitudes, and beliefs (Davies, 2000; Cox, 1998; Mearns, 1998).

Organizational safety culture is the assembly of characteristics and attitudes that establish the significance of safety shared by groups and individuals that comprise the institute (Cooper, 2000). It is a broad concept for explaining how the management of an organization shapes the safety beliefs and behaviors of the workers (Guldenmund, 2000). Safety culture is an enduring characteristic that is reflected in the consistent way that it deals with critical safety issues independent of temporary states (Wiegmann, 2004).

Poor corporate safety culture has been identified as a contributory factor in accidents by many industrial accident investigations, and it is now generally accepted that organizations with a strong and positive safety culture are more effective in preventing workplace accidents and injuries (Shiney, 2014). Organizational safety culture can be quantified through determinants such as clarity of responsibilities, levels of training, management selection criteria, safety audits and reviews, relations with regulators, and management actions and attitudes (IAEA, 1991). Other indicators of safety culture come from management style, commitment, and levels of communication. Five additional indicators of effective safety cultures include organizational commitment to safety, management involvement in safety, employee empowerment, reward systems that encourage safe behaviors, and systems to ensure problems are reported and resolved (Wiegmann, 2004). Production pressure perceived by workers, poor housekeeping, and lack of personal hygiene care facilities can also lead to poor safety culture in a work environment.

Organizations where management is perceived to be committed to safety tend to report fewer unsafe worker behaviors as a result (Mearns, 2003). Dedication to safety by management is also associated with the likelihood to report accidents and near misses, thus allowing for the evaluation of root causes and lowering the probability of recurrence (Mearns, 2001). So on a global scale, for countries with workplaces that tend to have authoritative management systems based on “command and control” methods that do not generally encourage or promote safety, it would follow that the culture of safety would not be as strong within its organizations or businesses, and accident and injury rates would be higher.

4.3 SAFETY CLIMATE DEFINED

Organizational climate is a descriptive measure that reflects the workforce’s perceptions of the organizational atmosphere at a particular cross section of time (Fahlbruch, 1999). Safety climate is regarded as the surface features of the safety culture determined by visible parameters such as the attitudes, perceptions, and safety-related behaviors of the workforce at a given point in time (Gonzalez-Roma, 1999;

Mearns, 2001). Safety climate is like a snapshot of the safety culture that is subject to change and somewhat unstable. Safety climate is comprised of the attitudes and beliefs of the workers as primarily demonstrated by their workplace behaviors and perceptions (Bentley, 2010; Zohar, 1980). Behaviors might be demonstrated by the likelihood to wear the required personal protective equipment. Perceptions can be measured through surveys that ask such questions as “Do you believe your supervisor considers safety important?”

Interpretations of the collective climates obtained are an indication of the penetration of top managers’ organizational view down to the other hierarchical levels (Flin, 2000). Management commitment to safety, and placing a high level of priority on safety, are closely related to levels of safety climate within organizations (Srinivasan, 2016). Safety management programs can also be structured in ways to maximize safety climate within specific organizations (Cheyne, 1998).

Measures of safety climate can be used as a predictive tool for the identification of potential safety problems (Clarke, 2006). Safety climate can be used to inform management of potential safety problems. As a result, effective use of accurate tools to measure safety climate can reduce overall accident and injury rates for organizations (Rodrigues, 2015). A measure of safety climate could be the likelihood of the use of safety eyewear as required by procedures and management oversight, as opposed to a strong safety culture in which the employee wears the safety eyewear because the worker understands the risks, and wants to protect their eyes. Culture represents more of a belief and a norm that a person would follow over time, even when they were working at home, for example. Safety climate is more a manifestation of the safety culture, expressed by the behavior and attitudes of the employees at a particular point in time (Cheyne, 2002).

Safety climate can be negatively influenced by organizational or environmental factors. Workplaces with a generally good safety climate and resulting perceptions and behaviors by the workers can develop poor safety climates when negative work environments of high levels of pressure or stress are introduced (Amponsah-Tawaih, 2016). Management systems can better ensure a climate of safety and related accident rate reductions, by ensuring appropriate worker training and a sound balance between safety and production goals (Kvalheim, 2016). Ultimately, a strong safety culture can be used to positively influence the temporary negative pressures that impact safety climate.

4.4 SAFETY CULTURE ASSESSMENT

Accurate evaluation of safety culture has been used increasingly by management systems to identify the problem areas in need of additional attention to reduce accidents (Carroll, 1998; Fuller, 2001). In addition, using safety culture assessment and information regarding opportunities for organizational learning, safety management and training can focus on corrective actions to target specific problem areas (Mearns, 2013; Lee, 2000).

It is important that international organizations have a clear picture of their safety culture and how it may change in different international settings. Many companies have begun to use safety culture assessment tools to profile the workforce

of organizations in international operations. This is particularly true in high-risk industries such as nuclear power, aviation, and petrochemical industries (Reader, 2015; Taylor, 2010). These evaluations have become increasingly important with the realization that organizational safety cultures can be influenced by national cultural tendencies to practice safe behaviors and avoid risk (Hofstede, 2010).

Studies have shown that organizations which learn what and where their weaknesses are and then take actions to improve their safety cultures and lead to safer behaviors in employees have fewer accident-related injuries and illnesses (ILO, 2009). Although operational parameters affect the likelihood of accidents and incidents, the social environment of the workplace plays a significant role in the disposition of employees to follow safe practices (Brown, 2000). The implementation of safety culture enhancement programs has even been shown to significantly improve the benefits of technical advances and management systems (Yau, 2014).

4.5 CULTURAL DIFFERENCES AND ADAPTATION

In certain countries, the national norms influence such aspects of worker behaviors as innovation in problem solving, and dependence on static procedures to solve dynamic problems (Lee, 2013) (Helmreich, 1999). Different cultures have been shown to have different perceptions, attitudes, and behaviors towards risk (Weber, 1998). Studies have also demonstrated cultural differences in flexibility to act on emerging risks, such as reallocation of resources (Weiner, 2005). These national cultural tendencies then influence the safety cultures that are formed by the managers and workers in organizations (Gharpurea, 2018). These differences can impact the numbers and types of accidents that might occur in various operations, especially highly complex processes and industries (Strauch, 2010).

The influence of national culture on the status of organizational safety culture has only recently been evaluated scientifically. In a study by Reader (2015), he found that corporate safety culture can be measured and closely related to national cultural characteristics. By using known or measured national characteristics, it may be possible to identify areas of concern by relating these to what is known about how safety culture influences safety outcomes in the workplace. High power distance and authoritative cultures that emphasize downward communications generate unwillingness to challenge authority and communicate upward. Based on what is understood about corporate organizations, these characteristics tend to reduce safety culture and increase injury and illness outcomes. Poor communication leads to high uncertainty and poor group harmony, with high dependence on established practice, and avoidance of change and innovation (Reader, 2015).

The basis of a good safety culture is an environment where workers have high levels of trust in the organization. This culture of trust is based on open communication and free flow of information, the belief that reported information will be acted upon, the work environment is just and fair, the organization is flexible when necessary, and it is an organization that fosters learning and personal growth (Reason, 1997). It follows that in organizations that inhibit communication and information, the safety culture would suffer. Similarly, in rigid organizations that discourage change to correct reported problems, safety would be impacted overall. So it follows that where

the social cultures of the country where the organization is located, and builds the workforce and management teams, the local culture could be expected to pervade and influence the organizational culture in significant ways.

In the global business setting, national cultural tendencies need to be considered and confronted by management systems directly to address cultural and communication differences between workers of different backgrounds and cultures (Manzey, 2009). For example, where national culture shapes behavior to avoid confrontation, special emphasis may be needed to encourage workers to report unsafe conditions or even exposures. In societies where women have been historically subservient to men, they may need special training or coaxing to become more involved in the safety process, in addition to the men, and management. Personal beliefs and attitudes about a certain gender or race of a co-worker can bias an individual's behavior in the workplace. A company operating a production facility overseas needs to have a good understanding of the societal culture to fabricate a culture of safety within the organization.

CASE

An industrial hygienist got a call from the university hospital occupational health physician requesting an evaluation of the endoscopy unit ventilation system because a worker had been seen for dizziness and shortness of breath after disinfecting endoscopes. After determining that the area ventilation system was operating properly the industrial hygienist interviewed the workers to try and determine how an exposure may have occurred. During the interviews it was determined that the worker had splashed glutaraldehyde on her forearm and it had dripped down into her glove. Rather than stop working, change the glove and wash her hand, she kept working because she did not want to report the incident to her supervisor. When asked why, she said in her Hispanic upbringing women were not supposed to confront men directly with personal problems, and she did not want to have to discuss the issue with her male supervisor. She thought she could wait until lunchtime to wash her hands. What are some things the industrial hygienist could do to ensure a similar event did not occur in the future with this worker or with others in the organization?

The organizational safety culture in globally operating corporations has been shown to vary according to local cultural norms (Kirkman, 2006; Schwartz, 1999). The national tendencies that exist within a society, and influence employee perceptions and beliefs, can play a significant role in the safety culture that forms within the local operation. Societal norms such as not contradicting superiors, admitting an error, or whistleblowing illegal activities of one's superiors or colleagues, can have drastic impacts on the overall safety of an operation. If an organization can become aware of the existing safety culture of the local society, it can play an important role in understanding their workers and what types of safety management or training would be effective.

National tendencies towards uncertainty avoidance (UA) have been shown to be negatively associated with the safety cultures that existed within organizations operating in those countries. Factors outside the control of management directly influence the safety culture within the organization through employee-related attitudes and practices (Noort, 2016). Uncertainty analysis is a cultural measure of society's

tolerance for ambiguity, and measures member discontent with unstructured situations. It was one of the five cultural dimensions developed by Geert Hofstede to describe national cultural differences (Hofstede, 1983). Countries with high UA cultures tend to minimize ambiguity by creating strict rules and laws, minimizing social change, and strong singular religious or philosophical beliefs. Companies in countries with high UA scores will have poorer safety cultures than companies in countries with low UA scores. Some predictors of safety culture associated with organizational styles for high UA and low UA company scores are shown in Table 4.1.

The UA indices for a sample of countries are shown in Table 4.2.

Other cultural factors developed by Hofstede to describe different cultures include individualism, masculinity, long-term orientation, and Power Distance Index. Individualism refers to the degree to which individuals in a culture accept and pursue goals that are in their own best interests, rather than seeking those of the group to which they belong. Masculinity is a measure of the degree the people in the group demonstrate what are considered to be masculine traits such as being assertive, ambitious, and competitive as opposed to more caring and demure traits considered feminine. Long-term orientation reflects a person's values on characteristics such as thrift and perseverance and ordering relationships according to status. However, short-term orientation values tradition, fulfilling social obligations, and

TABLE 4.1
Organizational Styles for High and Low UA Companies for Various Safety Culture Predictors

Safety Culture Predictor	High UA	Low UA
Employee perceptions of management commitment to safety	Management discourages new ideas and open discussion	Managers open to new suggestions and approaches
Collaborating for safety	Workers are unlikely to vary from protocols, make suggestions for improvements, or report errors	Workers are open to new ideas, innovation, and working together to solve problems
Incident reporting	Tendency to avoid reporting deviations from norms, including injuries or illnesses	Reduced concern in reporting errors or problems, including accidents
Communication	Top-down following chain of command, information is not shared freely	Open and two-way, less constrained by protocol, information is easily accessible
Colleague commitment to safety	Workers do not feel that their coworkers adhere to the safety program	Workers feel that they can rely on coworkers to act safely
Management support of safety programs	Managers see safety as a necessary expense and give safety programs little autonomy	Managers demonstrate a commitment to safety by actions and funding throughout the organization

TABLE 4.2
UA Indices for a Sample of Countries

Country	UA Index
Greece	112
Poland	93
Japan	92
France	86
Mexico	82
Brazil	76
Egypt	68
Germany	65
Nigeria	54
Australia	51
The United States	46
China	40
India	40
Ireland	35
Denmark	23

Source: Adapted from Clearly Cultural (2018).

reciprocation of greetings, favors, and gifts. Power distance refers to the extent to which people accept inequality in the distribution of power and status, or the degree to which people depend on superiors in a group.

Although there is little research available on how these other indices might be used to evaluate safety culture or performance in various countries, they could be useful tools to consider in designing international safety programs and policies. One recent study used the five Hofstede cultural factors to evaluate how each of the tendencies would impact safety culture in the global oil and gas industry. They found that the cultural tendencies of masculinity, long-term orientation, and Power Distance Index each had a significant impact and direct correlation on organizational safety performance (Gharpurea, 2018). Yet despite the proven relationships in this study, the nuances of how and why the impacts occur within the organization were not identified, and this area remains one that is in need of more research in order to design interventions to better improve the management of international safety programs.

In a review of how culture can affect sociotechnical system operations, Strauch (2010) determined that cultural factors within workgroups can impact rates and degrees of human errors. In addition to language differences, cultural differences can lead to behaviors that are associated with increased numbers and more severe accidents in marine and aviation industries. In addition, culturally heterogeneous work groups had more accidents than homogeneous ones, presumably due to the differences in understanding different cultural signs.

4.6 GLOBAL DIFFERENCES IN SAFETY CULTURE

In 1986, two major industrial accidents occurred, which were both later attributed to poor safety cultures. The Space Shuttle Challenger exploded just after liftoff and killed seven astronauts, and the Chernobyl nuclear power plant accident eventually killed hundreds and contaminated large parts of the Ukrainian countryside with radioactive materials. Each of these accidents was shown to be the result of safety cultures that allowed a continuous accumulation of failures within the organizations that led to the accidents. In many ways, these incidents led to the advancement of safety culture study in the following decades (IAEA, 1986). Some of the common cultural features between National Aeronautics and Space Administration (NASA) and Chernobyl were as follows:

- Competition between departments for necessary information
- Lack of response or slow, incomplete response, to identified errors or problems
- Budget and program cuts to essential OSH operations
- Management incentives for workers to maintain the status quo
- Lack of job security and extensive use of temporary workers
- Bureaucratic safety management systems
- Performance reviews based on production without consideration of safety (ICSI, 2018)

In a detailed study of safety climate measures based on sociocultural and/or individual factors between the United States and Italy, Barbaranelli (2015) demonstrated that U.S. participants had significantly more positive safety climate perceptions overall than the Italian participants. These results could have useful implications for a global company with operations in both countries. The management approaches to creating a climate of safety in Italy may need to be strengthened in comparison with U.S. branches, in order to achieve equal levels of site safety and security. Although this study did not provide definitive reasons for the differences between the two countries, it provides strong evidence that safety climates would vary among workers from other countries.

In many developing economies, workplace health and safety regulations have taken a back seat to business development (Michaels, 1985). The false assumption that safety regulation and safety programs increase operating costs and reduce profits is still a broadly held belief by many developing country governments and businesses. Additionally, decades of downplaying the value of OSH have pervaded the workplace culture to impact how managers and workers think about OSH. Despite continuous advances in OSH program development and management in developed countries, occupational health continues to be a low national priority for many economically developing countries (EDCs) (Perrow, 1984).

There is a wide range of progress in the development and implementation of OSH regulations and programs internationally. In general, the value of OSH programs and policies has been realized by both businesses and governments in developed countries; however, there are few political models for the justification and creation

of OSH regulation in EDCs (Jilcha, 2016). In many developing countries, the risks of occupational injury and illness are significantly higher than those in developed countries, largely because there are few requirements or standards for OSH to protect most of the workers (Tadesse, 2007; LaDou, 2003). Although more advanced countries have pockets of workers who are not well covered by OSH protections (e.g., informal workers, some small to midsized enterprises), and some EDCs have well-developed and enforced OSH regulations, the general status is that EDCs lag behind in OSH program development and implementation.

Significant percentages of the national production in EDCs are done within the informal economy; therefore, EDCs have less to gain directly from improved occupational health policies to protect informal workers who do not pay taxes and are not explicitly part of the economy. In these EDCs, the benefits of healthy workforces and populations need to be approached in a broader context of social and economic policy and equity (Swuste, 2002; Joubert, 2002).

As EDCs advance in OSH development, the early changes tend to occur on larger social issues such as national policies and regulations, social and economic structures, and human resource growth. Internal domains of organizations, including control of working conditions or hazards, tend to occur later in national development. Occupational health tends to be a low priority in developing countries partly due to limited resources and inadequate information. It is difficult to show government officials why OSH is significant to the country's economic growth, and therefore difficult to create an impetus for change (Jilcha, 2016; O'Neill, 2000).

Developed countries have political systems and finances to support scientific research that can drive policy and program development to support technical change (Verma, 2002). However, despite the evidence that having healthy workers in a society is closely related to a healthy economy, developing countries with poor credit, close to the poverty line, have few options for improving workplace OSH. The high number of workplace injuries, illnesses, and fatalities thus reduces the country's economic resources yet further, creating a spiraling decline (ILO, 2012).

Numerous examples exist to show how a country's political and social systems can have direct impacts on worker health and safety. There are as many scenarios for how culture affects OSH as there are countries. Companies with international operations not only need to be aware of regulations in those regions, but they must understand the social, economic, and cultural environments that will impact worker health and safety.

CASE: SAFETY CULTURE IN FRANCE

Food production is the leading manufacturing sector in France, with the highest number of employees at approximately 600,000 (Caroli, 2009). It provides an excellent example of how market and political forces act together to impact occupational health and safety. About 40% of French food-manufacturing jobs are classified as unskilled, and about two thirds are blue-collar. Many of these workers work at or slightly above minimum wage. But despite low wages, French workers are protected by strict Employment Protection Legislation that sets such operational parameters as working

hours, holiday and vacation time off, and job security. Although only about 8% of the workers in France fall into unions, 90% of employees are covered under some sort of public service regulated status.

With increasing global competition in the manufacturing sector, French firms have had to intensify work in order to take advantage of capital investments and maximize profits. Since overtime is strictly regulated, more employees must be hired and as a result, the employers must incur all of the additional overhead costs typically associated. In order to take advantage of expensive manufacturing equipment, many employers have begun operating on two and three shifts, which requires more workers yet. So despite shorter working hours, the low level employees are subjected to harsher working conditions, like shiftwork and nighttime hours. In some cases the intensification of work has led to increased absenteeism (possibly due to increased injury?) Which then requires firms to hire yet more replacement staff.

(Caroli, 2009).

4.7 CONCLUSIONS/RECOMMENDATIONS

Strong safety cultures influence the abilities of effective safety climates and greatly improve organizational safety performance and operational efficiencies. Organizations should strive to induce a culture of safety into their organizations in any country and should be especially aware of the cultural variations in workers going abroad or being hired in foreign nations for international operations.

Weak safety cultures in developed and sophisticated organizations have been shown to lead to accidents with devastating consequences. When hazardous industries are transferred to developing nations with limited resources and experience, emphasis on the development of a strong safety culture can play a significant role in reducing the inherent risks.

In developing countries, the large number of workers in the informal industry warrants enhanced development of an occupational safety culture at a national level (Kim, 2016). In addition, worker health and safety in the informal sector is generally unregulated (Rantanen, 2009; Naidoo, 2009). Additional research needs to be conducted on the associations between informal work and OSH working conditions. National OSH reporting systems need to be expanded to include this sector and these workers to better understand and address OSH issues and problems. Once the hazards to informal workers are identified, and controls are developed, workers need to receive associated necessary training to minimize the risks.

Technologically advanced countries with sophisticated OSH regulatory systems are also more likely to have a national culture of workplace safety in the working population. Advances in management systems and further growth in the development of workplace safety culture will continue to reduce the rate of incidents moving forward. Developing countries not only need support in the creation of technical and policy advances in OSH, but, in parallel, need training and development in safety culture in order to fully minimize workplace injuries, illnesses, and fatalities. Cultures of injury and illness prevention need to be germinated and nurtured at the national levels of developing countries to be sure to include all workers and organizational activities, including the informal sector (Kim, 2016; Ametephe, 2013).

Management systems of organizations can use the available information regarding national culture and the tendencies in workers to target specific areas for specialized attention to reduce possible negative outcomes. Cultural norms are influential in creating a corporate safety culture, but they can be influenced positively by targeted management actions (Mearns, 2009). Although research has suggested that training can moderate the impact of cultural tendencies of workers on an organization in certain cases (Klein, 2007; Sutton, 2006), numerous questions remain with regard to overall performance improvement and how to avoid culturally induced safety problems in complex operations (Ahasan, 2001).

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