



# The Behavioural Factors' Characteristics of Safety Culture

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## Abstract

Translating culture formation into behavioural terms helps people to understand how the process works. People learn more from behaviours than from printed statements and company policies. Hence, the objective of this paper is to identify the behavioural factors' characteristics of safety culture for Malaysian construction companies. The sample for the study was selected from the total population of Grade 7 registered contractors but was limited to only those in the area of Klang Valley. Leadership, organisational commitment, management commitment, safety training and resource allocation were revealed from the questionnaire survey approach as the practices that embedded safety culture into the organisational culture. The Malaysian construction companies are currently placing an emphasis on these behavioural factors' characteristics of safety culture.

**Keywords:** contractors, safety programmes, social learning, management commitment

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## **1.0 Introduction**

The introduction of self-regulation through the enactment of OSHA, 1994 is aimed to promote the safety culture. However, there is no measurement established to enable the profession to quantify and analyze safety culture in the Malaysian construction industry. Anthony (2005) highlighted this as one of the challenges faced by Malaysia for not having nor developed any indicators for occupational safety and health. Since safety culture is a concept, according to Sekaran (2003), to operationally define a concept is done by looking at the behavioural dimensions, facets, or properties. These are then translated into observable and measurable elements so as to develop the measurement of the concept.

An indicator in this research is the factors' characteristics of safety culture. The term factors' characteristics to capture the various terms used in safety culture studies, i.e. indicators, dimensions, features, factors, approaches, characteristics etc. which were presented in descriptive form, tabulation (framework) or illustrated as models.

Hence, the objective of this paper is to identify the behavioural factors' characteristics of safety culture for the Malaysian construction companies. Safety culture is defined as 'The product of shared values, beliefs, attitudes, and patterns of behaviour based on a top-down approach practice that is concerned with minimizing the exposure to conditions considered dangerous or injurious to the entire group members on a self-regulatory basis (Faridah, 2009; 2011). Translating culture formation, according to Schneider (2000), into behavioural terms helps people to understand how the process works as people learn more from behaviours than from printed statements and company policies. Furthermore, experts now estimate that 80-90% of all industrial accidents are attributed to human factors (Fleming et al., 1999).

## **2.0 Literature Review**

### **2.1 The Behavioural Factors' Characteristics**

The literature review on safety culture shows that there are numerous indicators or practices of good safety culture. However the specifics that characterise their excellence and the measurement are descriptive and do not show the process on how safety culture can be improved, leading to an improved safety behaviour (Faridah et al, 2009a). Faridah further revealed the factors' characteristics for safety culture through an extensive literature review on safety culture models: The International Atomic Energy Agency (IAEA), 1991; Cox et al. (1997); AEA Technology, between 1993 and 1994; Grote and Kunzler (2000); Geller (1994); and Cooper (2000).

Faridah et al. (2009b) further developed a framework to promote safety culture which comprised of three safety components and these involved three phases in its processes;

- I) The Psychological factors which are the values and beliefs that underlie their behaviour.
- II) The Behavioural factors which are brought to the surface through the observable

practices.

- III) The Situational factors which are portrayed through an internal organisational environment that reinforces the desired behaviour and the adaptability to the external changes and demands on safety requirement.

These three elements also mirrored those accidents causation relationship found by a number of researchers (Heinrich et al., 1980; Weaver, 1971; Reason, 1990; Suraji, 2001). Furthermore, the model itself promotes self-regulatory processes consistent to the definition of safety culture previously established.

## **2.2 The Behavioural-safety culture initiatives**

Many safety professionals feel that the key element of a good safety program is the efforts to modify behaviour and to encourage safe behaviour. Since behaviours are a function of their consequences, culture formation can be thought of as a series of behaviours and consequences (Faridah et al., 2011).

Safety culture has been studied and positively concluded in previous studies and has been known to show positive results on safety outcome (Teo and Phang, 2005). Creating a strong organisational culture is a powerful tool to influence employees' behaviour and improve their performance. The informal rules may help employees to understand what is expected of them and such a culture may also help people feel better about their efforts on behalf of the organisation.

Defining safety culture, based on behavioural factors frees us to include a host of behaviours as part of the puzzle that creates the cognitive construct of organisational culture (Schneider, 1990). Researchers have found a direct organisational culture – performance link. According to Siehl and Martin (1990) a “strong” organisational culture is where espoused values are consistent with behaviour and where employees share the same view of the firm.

## **2.3 The Behavioural Factors and dimensions**

Faridah et al. (2010) revealed that the factors identified from the Preliminary Survey were; leadership, management commitment, organisational commitment, training and resource allocation that will be discussed as follows;

### **2.4 Leadership**

Many books on management or leadership have pointed out that improvements in performance are associated with “good leadership” Stringer (2002, p. 100). Faridah et al. (2011), revealed that the items measuring leadership are role model, visibility at work site, support, employees involvement in goal setting, participative decision making, setting clear responsibility and providing leadership for OSH activities.

### **2.5 Organisational Commitment**

The organisational commitment dimension measures the strategy and the structure of the

organisation towards safety. According to Johnson and Scholes (1999, p. 22), strategy implementation “is concerned with the translation of strategy into organisational action through organisational structure and design, resource planning and the management of strategic change.” Managing change requires actions that improve both the organisational culture and the processes adopted. According to Price et al. (2003), consideration must, therefore, be given to:

1. Physical changes, such as organisational structure, management systems, policies and procedures, action plans, short-term budgets/resource allocation, and information system and
2. Behavioural changes, such as values given to quality, excellence, communication, innovation, and employee participation.

On the other hand, the organisational structure of an organisation determines the power distribution, information flow and decision-making processes in respect of responsibility, lines of accountability and levels of authority (Waring, 1996). The establishment of clear and precise responsibility and authority will help each and every individual at various levels to perform his/her task unambiguously. The organisational culture might help to explain the organisational behaviour, and that the management and organisational factors could influence safety performance, both predated INSAG’s introduction of the term safety culture, according to Sorensen (2002). A suitable structure will improve the efficiency of communication between group members, according to Chenge et al. (2003).

## **2.6 Management Commitment**

Most literature is unanimous in identifying management commitment as a pre-requisite for safety, the general reason being that management is responsible for establishing objectives, developing strategies, allocating resources, development and implementing systems and by virtue of its role setting an example (Levitt and Samelson, 1993). The ways in which the management commitment’s reflected, according to Faridah et al. (2011); participation, visibility, supportive, demonstrate leadership, positive attitude towards safety, in control of the activities, and the existence of values, belief and the acknowledged significant safety programmes.

## **2.7 Training**

Training is one of the cornerstones of an effective safety culture. Safety training and education are integral to teaching safe behaviours and getting feedback on effectiveness (Molennar, 2002). Job safety is a team effort and can be achieved by training and education (Koehn et al., 1995). Lack of proper training is one of the root causes of construction accidents (Toole, 2002). Based on literature, the aspects of training are not limited to but include the safety and health responsibilities of all personnel concerned, regularly and thoroughly in specific job techniques, new employees are given extensive safety training, immediately after hiring, the dedicated time allocated and its effectiveness (Faridah et al., 2011)

## 2.8 Resource Allocation

The smooth running of safety activities also demands sufficient funds to be allocated for safety purposes. The creation of budgets is another process that reveals the management assumption and beliefs (Schein, 2004).

Ostrom et al. (1993) agreed that rewarding individuals who call attention to safety problems and are innovative enough to locate safety hazards as a reflection of good safety culture. This is further supported by Weigmann (2002) and Vredenburg (2002). Stringer (2002) used the word "recognition" instead as one of the climatic dimensions where high recognition climates are characterised by an appropriate balance of reward and criticism.

## 3.0 Methodology

The examination of safety culture is from the individual perspectives of the senior executives as well as the data source. The scope of the study was derived from the whole population of 866 (overall total of 1,171) numbers of a Grade 7 contractors listed under the Construction Industry Development Board (CIDB) Directory who undertake Building Works within Klang Valley. The Main Survey was directed to 117 respondents who had responded to the Preliminary Survey undertaken prior to this survey.

Seven items were used to measure on leadership, management commitment, safety training and resource allocation. However, for organisational commitment which was further sub-divided into *Strategy* and *Structure* it was measured with seven and five items respectively. Generally, a seven likert-scale was used to measure all the dimensions (1 = not very true in this organization and 7 = very true in this organization). The assessment of the behavioural factors was deduced based on the mean score.

## 4.0 Results and Discussions

The perceptions of the four categories of respondents were made i.e. Chief Executive Officer or Director, Senior Manager, Middle Manager and First Line Manager. Though some were partners, the bulk of the respondents were employees to the organisations. The number of years of service provides a strong indicator of the quality of data collected and in this case 80.0% of the Top level managers recorded 6 years or more. Similarly, more than 80.0% of them had at least a Bachelor degree. All dimensions investigated recorded alpha coefficients of about 0.90 to indicate that there is a high level of internal consistency in the data collected and hence valid comparative evaluation can be made between the dimensions.

Among the pertinent points revealed was that among those respondents a significant proportion of them were entrusted by the companies to inculcate safety culture into the organisations. Since the targeted respondents are the Senior Management, the majority were empowered and were highly empowered to inculcate safety culture into their organisations, whereas less than 10% reported that they were not empowered. This shows

that the targeted respondents has been reached in this research.

This research was further supported by the fact that the culture of the organisation is a highly influential factor as compared to the structure and the strategy of the organisation towards embedding of safety culture. On the other hand, the management commitment, followed by leadership, organisational commitment, safety training and resource allocation were ranked in descending order of importance as the management behaviours that influence the embedding of safety culture. Among the significant dimensions cited were leadership, strategy and structure. The respondents also believed that leadership plays a significant role in the smooth running of an organisation. They also strongly perceived that the higher authorities endeavoured to achieve the highest safety level in the company. For example, they were glad that the company provided safety training to all subordinates free of charge.

In general, these behavioural factors, four dimensions received mean scores exceeding 5.00 and four received scores below the 5.00 median score were the current state practice among the Grade 7 construction companies, the detail of which had been discussed by Faridah et al. (2011).

## **5.0 Conclusion**

A fair emphasis on the behavioural factors' characteristics with an equal number of elements received mean score exceeding and below 5.00 median score were found. In the aspects of leadership, despite of a high emphasis were was given for senior management as a role model, visible at worksite, supportive, involve people in goal setting, encourage subordinate in making decision and provide leadership for OSH activities, a low emphasis was given on the overall responsibility for the sub-contractors' safety and health.

The management commitment was rank as the most important as compared to other behavioural factors. However, the training to ensure their relevance and effectiveness marked a fairly low emphasis. Training was ranked as the fourth most important as compared to the other behavioural factors. Furthermore, none of the items recorded a high emphasis in the current practices on resource allocation, despite it being critical and there is need for it to be recognised by the senior management. This is also consistent to the results, where resource allocation was ranked as the least important.

Since research on safety culture can further be explored by applying a variety of methods to assess as there is not specific limitation towards understanding it, this significant research marked and opened up new avenues on safety culture in the Malaysian context in future. Thus the attractiveness of safety culture is the idea that the assessment of these aspects may provide leading indicators of the safety level of the organisation and may be used to bench-mark organisational safety performance.

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