

Safety Culture at the Workplace: A Study on Malaysian Manufacturers

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ABSTRACT

Up to 1995 the International Labor Office reported that Malaysian manufacturers in general had a languid attitude towards safety at the workplace. The ILO office claimed that the majority of workplace injuries are attributed to attitude, knowledge and practices of employers as well as employees. After the tumultuous financial crisis of 1997, the contraction in economic growth from 1998 right up to 2002, SARS in 2003, the impact of the Iraq war in 2003-2004 and finally, the unprecedented tsunami tragedy at the end of 2004, Malaysia has undergone an eventful ten-year period, and this has especially affected the economic growth within the manufacturing sector. The lingering question is, "Has the safety culture in this sector improved during this period?" Records indicated a decline in the overall industrial accident rate and consequently the manufacturing sector as well. Research also confirmed this situation as the same direction is undertaken by management in general by putting heavy emphasis on the safety at the workplace. Safety Performance Index have improved and signs are showing a positive attitude by both management and employees on the seriousness of cutting down industrial accidents.

Keywords: *safety culture, industrial accidents, Malaysia.*

Introduction

Both the annual national employment rate and the manufacturing sector are looking at a positive trend from 2000 to 2003, increasing between 3.1 to 4.5 percent. According to the Central Bank of Malaysia Annual Report (2003), the manufacturing sector total employment increased by 8 percent per year, since the last four years.

Statistics obtained from the Department of Occupational Safety and Health, Ministry of Human Resources (2004), puts the pre 1995 accident rate per 1,000 worker at 31.0, whilst post 1995 up to year 2003, is 10.3. This means an annual accident rate of 3 percent out of 2.5 – 2.8 million total manufacturing sector workforce. On record, this is considered a significant improvement after a decade of eventful beginnings and endings.

Research Questions

1. Has there been a change in attitude on the part of management within the manufacturing sector?
2. What are the factors contributing to the decline in industrial accident rates?
3. Which particular industry within the manufacturing sector has shown an exemplary behavior towards work safety?

Research Objectives

1. To investigate whether there is truly an absolute decline in workplace accidents in the manufacturing sector
2. To examine the factors that contributed to the decline in industrial accidents
3. To determine whether the industry has improved their safety standards and is at par with that of the developed nations'.

Literature Review

Practitioners on safety at the workplace or occupational safety and health (OSH) have long been harping on the subject of organizational failure being the root cause of human failures that leads to accidents. Studies have also shown that human error has been blamed for numerous accidents (Krause 1995, Vaughan 1997). But theoretically, in practice, it

is the big men at the top who lay down policies and the rest at the bottom follows. Policies shaped from an organizational culture that does not support safety will definitely result in disastrous consequences. If widespread consensus exists about the importance of those values that support accident prevention, the culture is cohesive and strong, however, if little agreement exists, the culture is weak, this determines either a strong or weak safety culture exists. The increasing emphasis on management is accompanied by a growing recognition of the importance of the human factors. The essential message is that attribution of such incidents to human error is not an appropriate response and that it is more constructive to treat them as arising from work situation, which is the responsibility of management.

In a survey of safety hygienists and safety engineers in the US, it was found that the majority of respondents claiming the employers to be a barrier to addressing safety and health hazards. The two most important barriers cited as serious, was that “employers have other priorities” and “lack of knowledge and does not understand hazards” (Ochsner and Greenberg, 1998).

Blewett and Shaw (1997) review on numerous findings also suggests that one of the strategies for improving OSH is to address the OSH culture. The researchers conclusion is based on Harry Shannon’s and Andrew Hales’ researches which found that, on comparing organization with high and low injury rates, management concern about the workforce, participation in decision making and participative problem solving in relation to OSH and workforce trust that management is committed to OSH were all linked to lower injury rates. Every guiding principle emphasizes inculcating management safety values, which indirectly influence the safety culture of an organization. Therefore, it must be recognized that the leadership must provide direction without stifling employee involvement (Hidley, 1998). By recognizing the existence of a range of OSH management-related international and national voluntary programs, the ILO adopted guidelines on OSH Management Systems ILO-OSH 2001 (ILO 2001), which carries no legal obligation but rather emphasizes on concepts such as continual improvement, employer’s leadership and commitment and workers’ participation (Lopez-Valcarcel, 2002).

Lopez-Valcarcel (2002) also said that OSH and organization’s competitiveness is highly related when he suggested that “there is a need to invest in the workers” both in their training and improvement in their working condition. Organizations with lower injury rates have higher productivity and vice-versa. Thus improvement in OSH is beginning to

be seen by many organizations not only as a legal requirement (Occupational Safety and Health Act 1994), but also as a means of improving productivity. Under the ISO 9000 series, many links have been shown to exist between OSH and quality. For example a program for management of quality of an organization has to ensure the safety of the production processes; and that the nature of the safety problems is similar to the quality problems (e.g. shortcomings, errors etc.) Therefore, concepts such as motivation, participation and cooperation are all relevant indeed to OSH culture. Hence, investment in OSH of the worker will lead to overall improvement in quality and productivity. To top it all, a survey of 12,000 European consumers agreed that, the role of business attitudes to commitment to social responsibility is the deciding factor on buying an organization's products or services, i.e. seventy percent of the respondents say, "Protecting the health and safety of workers" was an important area for the companies to support (CSR, 2000).

Vredenburg (1998) studied the safety culture in hospitals in the US and derived seven organizational factors related to management practices that determines safety culture of the organization. These factors are, commitment, communication, training, hiring & selection, empowerment, reward and punishment. To round it up, Head (1995) added one more variable, without which, an OSH culture will not be complete, this is, enforcement.

Primary Data Analysis

The Malaysian manufacturers' safety culture post 1995 till 2000

To control accidents at the workplace, the safety management model or safety culture should be incorporated in the organization's culture. Abdul Rahman's (2001) study showed the above variables to be good predictors of safety performance. Accordingly, 90 manufacturers were selected from the Directory of Importers, Exporters and Manufacturers (1995) a publication of the Malaysia External Trade and Development corporation (MARTRADE). Table 1 summarizes the analysis and the findings, which initially utilized the step-wise multiple regression technique for the predictive qualities of the independent variables, i.e. the safety management practices. Subsequently factor analysis was conducted to test whether the safety management practices (independent variables) is actually measuring what it was supposed to measure that is the safety performance of the organizations. The results of the tests are given below:

Table 1: Analysis of Malaysian Manufacturers' Safety performance Post 1995 to 2000

Profile of Respondents	Percent	F-Statistics	R-square	Adj.- R-square	Safety variables	Safety Performance Index
Electronics	28	Not significant	-	-	-	0.00 – 76.16
Metal Products	11	5.590	.817	.671	Training, reward, commitment	6.14 – 446.32
Auto Parts	13	36.40	.973	.947	Reward, commitment	0.06 – 140.66
Electrical Appliance	7	7.093	.825	.709	Hiring	0.02 – 17.60
Chemicals	7	-	.968	.842		0.32 – 276.01
Rubber products	3	N = less than 2	Analysis not possible	-		28.53 23.71- 250.99 (tyres)
Paper products	1	“	-	-		11.59
Consumer products	3	Not significant	-	-		0.00 – 40.52
Tobacco	3	231.03	Analysis not possible	-	Reward	0.67 – 3.07
Food	7	5.808	.795	.658	Training, commitment	0.00 – 595.65
Building materials	2	Not significant	-	-		5.49 – 42.00
Medical device	3	745.72	Analysis not possible	-	Training	2.41 – 89.77
Glass	2	Not significant	-	-		0.99 – 11.79
Textiles	3	Not significant	-	-		0.01 – 6.16
Wood	1	N = less than 2	-	-		36.44
Aviation products	1	“	-	-		0.83
Oil & Gas	1	“	-	-		1.26
Oil Palm Mill	1	“	-	-		168.40
Auto makers	2	Not significant	-	-		0.10 – 420.08

Initially, multiple regression indicated significant relationship exist between the independent variables and the dependent variable, safety performance hence, picked up the independent variables, training, reward, commitment and hiring. Consequently, factor analysis picked up two more independent variables, i.e. communication and enforcement. The variable empowerment somehow blended into the management commitment variables. This study somewhat concluded that all seven variables are good predictors of accident/injury rates leading to effective safety performance. That is, the more an organization emphasizes or demonstrates the importance of each independent variables, the lower is the injury rates. From the direct responses of the sample, they all seemed to agree that management should be active participants in safety management, that safety issues should be listed high on the agenda of management meetings, enshrined in the company's safety mission, goals and objectives. It is also deemed important that management must see to it that employees are following instructions to the letter ensuring safe work practices are carried out. Continuous improvement can only occur if employees are given safety training all year round. With the advent of sophisticated electronic and communication system, there is very little chance that information could not reach the down line. Hiring and selection is of course a good predictor but to practice effectively will not be possible because the nature of manufacturing industry, requiring school-leavers to be machine operators does not list this as a priority or a very important variable for safety performance. However, the reward/punishment variable, although practiced by a few respondents is carried out in an ad hoc manner and no fixed criteria is used to decide on who should be penalized or rewarded. Malaysian manufacturers in general are aware of their responsibilities and are moving towards providing the safety environment that ILO has been promoting to developing nations.

Secondary Data Analysis

Secondary analysis of safety performance to a certain extent has provided testimony to the improved safety culture amongst Malaysian manufacturers. Data collected by the DOSH has indeed shown a steady decline in accident and injury rates, suggesting that the passing of the Occupational Safety and Health Act 1994 has had an impact on the safety performance of manufacturers. Table 2 below details the number of industrial accident records for pre and post 1995:

Table 2: Industrial accident/injury rates for the period 1995 – 2003

Year	Total National Workforce ('000)	Total Workforce in the manufacturing sector ('000)	Total Accidents Reported
1990	6,686	1,333.0	56,247
1991	6,891	1,470.0	63,594
1992	7,096	1,639.0	69,869
1993	7,396	1,742.0	71,688
1994	7,618	1,892.1	68,281
1995	7,915	2,052.6	63,733
1996	8,161	2,177.8	56,322
1997	8,890	2,307.6	37,829
1998	8,800	2,500.0	39,279
1999	9,177	2,600.0	40,730
2000	9,572	2,700.0	41,331
2001	9,892	2,750.0	35,642
2002	10,198	2,800.0	33,523
2003	10,535	2,859.0	23,319 (up to Sept.)

Source: Central Bank of Malaysia Annual Reports (1990-2003) Statistics from the Social Security Organization of Malaysia (1990-2003) Department of Occupational Safety and Health Malaysia (1990 – 2003)

Statistically, records have shown that on average, the accident/injury rates have declined by approximately 18.8 percent since 1995 to 2003. This study has also indicated that the industry leader in improved health and safety at the workplace is the tobacco, oil and gas, aviation parts, which recorded less than 10 injuries per year. The other sectors which recorded marked improvements in their safety performance, are, the textile industry followed by the electronics industry. According to statistics compiled by the Human Resource and Labor Ministry, since 2000, the oil and gas or the petroleum industry, the electronic and chemical industry, known for the highly hazardous nature of their workplace have achieved outstanding safety and health performance and have been recognized for their effort. According to the ministry, these industries achievements can be attributed to the high level of safety alertness, good safety management systems and well-trained personnel (Safety Recognition Award, 2004).

Categorically the nature of injuries sustained by most employees fall into the following:

Table 3: Ranking of Injuries Sustained between Malaysia and Other Developed Countries

Types of injuries	Malaysia	United States	United Kingdom
Burns	2 nd	4 th	2 nd
Sprains & strains	4 th	1 st	2 nd
Cuts	1 st	5 th	2 nd
Dislocation	3 rd	-	2 nd
Fracture	5 th	2 nd	1 st
Multiple injury	6 th	6 th	2 nd
Bruise	-	3 rd	-
Amputation	-	10 th	3 rd

By comparison, cuts seemed to take 1st and 2nd place for Malaysia and U.K. but 5th place for the US. Sprains and strains take the center stage. The majority of injuries are those grouped into multiple injuries (6th placing for both Malaysia and US). The types of injury most common occurring are burns, dislocation and fractures. It could be seen that the majority of injuries fall into the minor type of category. The ones that are considered life-threatening such as multiple injuries, amputation and the like fall into the bottom end of the scale.

Conclusion

From readings and documentations gathered, the passing of the Occupational Safety and Health Act 1994, in Malaysia, has achieved its objective of reducing the accident and injury rates substantially and improved the safety performance of the manufacturing sector tremendously. This sector, being the most notorious with an average of 41– 65 percent average injury rates per year has indeed shown a track record of declining accident rates since the inception of the Act, with the exception for the period between 1999-2000.

Recommendations made by the Human Resources Ministry to emulate the petroleum and allied industry of adopting the Safety and Health best practices and new approach, which included the behavior-based safety system, seemed to hit the right chord. For any system to work, it needs the management's intervention and magic hands before positive results could be achieved.

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