

A REVIEW OF COMPLIANCE WITH HEALTH AND SAFETY REGULATIONS AND ECONOMIC PERFORMANCE IN SMALL AND MEDIUM CONSTRUCTION ENTERPRISES

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Small and medium enterprises (SMEs) constitute over 90% of construction businesses and are vital to construction industry operation. Health and safety regulations in the UK compel all organisations, regardless of their nature or size to comply with health and safety rules. However, there is evidence that the risk of suffering an occupational accident in SMEs is higher compared to large enterprises. For every 100,000 workers in the European Union SME sector there are more than 4100 accidents involving over three days absence; while the same rate is 3088 in large firms. In terms of cost, SMEs spend more to remedy (considering costs of rectification work, fines, prosecutions and sentences) adverse health and safety incidents. Fundamentally, the high cost of human capital and the destabilising effects of health and safety make the financial performance of SMEs exposed to greater uncertainties and risks. Indeed SME financial performance is often worse than for large firms. Various attempts by previous research work to substantiate the relationship between compliance with safety and financial performance of SMEs seems elusive. The research question is; does compliance with health and safety enhance SME financial performance? It is argued that SME commitment to health and safety spins off into many aspects of business performance and thus they simultaneously also benefit from better profitability. The paper is based on a literature review and an appraisal of HSE prosecutions in the period 2007 - 2011. It is a supplementary study and part of an ongoing PhD that seeks to appraise the effects of investment in health and safety in the UK construction industry.

Keywords: compliance, financial performance, health and safety, SME

INTRODUCTION

Arguably, the nature of small and medium enterprises (SMEs) makes these types of businesses vulnerable to adverse health and safety incidents. Arocena and Nuez (2010: 1) stated that ‘the economic adversity and risk of suffering an occupational accident in SMEs is higher than in larger enterprises. The annual data for every 100,000 workers in the European Union SME sector are more than 4,100 accidents involving over three days absence; while the same rate is 3,088 in larger firms’. In the UK, Philips (2011)

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referring to the Health and Safety Executive (HSE 2006) stated that, 82% of all reported health and safety injuries in the construction industry occur within SMEs and in some cases, these figures rise to 90% of fatal accidents at work. Moreover, the HSE (2005: 23 - 24) asserted that, SMEs are less likely to comply with health and safety regulations due to fears that, compliance with health and safety regulations will not enhance their economic performance.

The former Department for Business Enterprise and Regulation Reform (BERR 2008: 17) now the Department for Business, Innovation and Skills (BIS) stated that, compliance with health and safety regulations boosts economic performance of organisations. The BERR (2008: 6) claimed that 'SMEs spend approximately six times more per employee than large firms, to comply with preventative health and safety requirements, and such expenses are likely to have an adverse impact on their economic performance'. Similarly, a study conducted by the HSE (2003: 2) highlighted a disproportionate cost of compliance with health and safety between SMEs and large companies. The study revealed that, 'it costs SMEs on average £341 per employee, per year to comply with health and safety compared to £37 per employee, per year for large organisations'. A research study conducted in mid 2000 by the Federation of Small Businesses (FSB 2006: 3) shows that, on average it costs SMEs £598 per employee per year to remedy non-compliance with health and safety rules and regulations and is widely considered to have adverse effects on SME financial performance compared to large firms. Head and Harcourt (1997) highlighted the direct and indirect cost of accidents; direct costs are visible and include insurance compensation and medical charges. Indirect costs are hidden, and include for example lost labour time, cost of repairs and costs of replacing injured workers.

Furthermore, findings by the FSB (2011) suggests that, the disproportionate cost of compliance with health and safety between SMEs and large firms seems to be much higher in recent times, due to high cost of insurance and other economic factors. Philips (2011) asserted that, SMEs are less likely to overcome adverse safety incidents due to cost of insurance and other punitive costs. In this regard, it could be argued that a single untoward safety incident has the potential to substantially destabilise or liquidate SMEs, due to the high cost of human capital coupled with the fact that most SMEs do not have the volume of work elsewhere in their organisations to compensate losses incurred. Thus, the HSE (2005: 6) claimed that, there exists a variety of economic perspectives about compliance with health and safety by construction SMEs. The HSE (2002) affirmed that, most often than not, an economic viewpoint about compliance with health and safety is usually linked to limited access to finance which is deemed a major constraint to SME's growth.

Recent data from the HSE (2011) about prosecutions involving health and safety fines, court sentences and other related health and safety breaches by construction firms show that, on average there is significant difference between magnitude of fine (penalties) or sentences issued to SMEs when compared to large firms for similar non-compliance with health and safety offences. In terms of number of fines, the HSE (2011) data reveals that, SMEs incurs more fines than large firms, in a ratio of 6:1. Arguably, the high number of fines linked to SMEs attests to the fact that, they dominate most construction work and perhaps prove that this category of firms lacked well trained health and safety personnel. Thus, Dorman (2000) affirmed that, there is need to bear in mind that most SMEs are financially fragile compared to large firms probably due to their institutional and financial (market oriented) failures and constraints.

In line with this argument, some schools of thought are of the view that, SMEs are supposed to receive lesser punitive fines and sentences for health and safety breaches or offences due to their fragile economic performances (HSE, 2005). On the other hand, allowing SMEs to settle for smaller fines or sentences for health and safety breaches or offences because of their fragile financial status or in times of turbulent economic circumstance may be considered a licence to SMEs not to comply with health and safety regulations; because fines associated with non-compliance with health and safety are mainly considered the major driver to improve performance (HSE 2005: 3). Though, it should be mentioned that not all SMEs are financially fragile. Bingham (1999) in an article titled 'Better safe than sorry' stressed that, 'those fines regardless of the size of firms contain a message. The days of being thumped for a few grand for health and safety breaches have gone'.

LITERATURE REVIEW

Definition and role of SMEs in the construction industry

The phrase small and medium enterprise (SME) is often used to describe a range of enterprises, with traditional definitions often based on number of employees or turnover. In terms of a universally accepted definition of SME, it is quite difficult to give a simple or straightforward explanation to the phrase. According to BERR (2008: 13), SMEs can be defined based on sections 382 and 465 of the UK Companies Act 2006. This Act defines, 'a small company as one that has a turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees'. While, a medium-sized company has a 'turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees'.

Generically, SME businesses are heterogeneous in nature and they dominate a wide array of construction business activities, ranging from ventures such as artisan, joinery firms, tiling firms, painting works, plumbing, and brick laying businesses. The Organisation for Economic Co-operation and Development (OECD 2004: 14) states that 'SMEs are of particular importance to the construction industry; because they constitute more than 90% of all businesses in the industry'. BERR (2008: 11) stressed that, 'SMEs account for 83.7% employment and 67.4% turnover generation in the construction industry'. The European Agency for Safety and Health at Work (EASHW 2003) argued that, 'approximately 99% of construction firms in Europe are (SMEs); thus their involvement in the day-to-day running of construction businesses make SMEs more susceptible to adverse safety incidents when compared to large firms'. Hence, the nature and characteristics of SMEs require a unique approach in all aspects of economic evaluation, especially ascertaining whether compliance with health and safety enhances financial performance

SMEs and formal health and safety compliance management systems

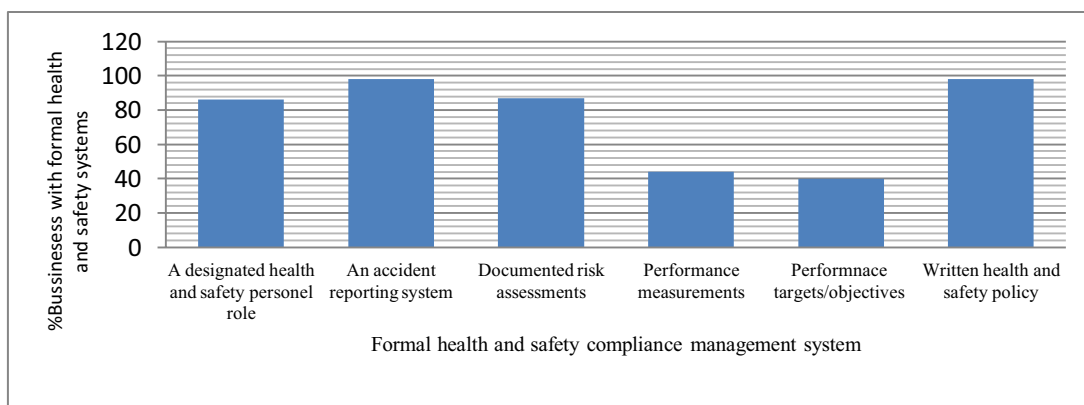
The phrase 'compliance with health and safety' has no specific definition. It is often used to mean an orthodoxy of health and safety rules and regulations. For example, in the UK, all firms have a legal responsibility for the health and safety of anyone affected by its business irrespective of their nature, size or volume of work. According to the UK Government Business Link (UKGBL 2012) compliance with health and safety is a legal responsibility of all employers to everyone affected by employers' businesses which entails:

- Carrying out thorough health and safety risk assessments.
- Drawing up a health and safety policies - for businesses with more than five employees.
- Ensuring workplaces meet minimum standards of conformity and cleanliness.
- Recording serious injuries, diseases or dangerous accidents in accident book.

The HSE (2005: 3) stressed that, ‘different factors affect compliance with health and safety, but the main motivator for complying, or trying to comply with health and safety is the general fear of the law, liability (fear of being sued by clients) and threat from local workplace if non-compliance was not remedied’. The HSE (2003: 41) alluded that, research findings based on construction sites revealed that, the main factors motivating compliance with health and safety regulations by SMEs were legal obligation (67%), health and safety publicity (67%), and insurance costs (50%). Other factors are development of quality systems (50%), and supplier / customer / client pressure 33%. Conversely, the major reasons for non-compliance with safety by SMEs were identified as: lack of awareness of legislative requirements, inadequate knowledge on how to comply with safety obligations, money and poor management structures.

In addition, an HSE (2003: 5 - 6) study revealed that many businesses, especially construction SMEs, do not have formal health and safety compliance management systems in place. The study cited lack of knowledge on the benefits of complying with health and safety, small number of employees, low priority and time restriction as reasons for not developing formal health and safety management compliance systems. Findings from the HSE (2003: 36) claim that, 71% of SMEs compared with 84% of large firms agree to have formal safety system in place. Unfortunately, out of the 71% of SMEs that have formal safety systems in place, it was discovered that, their systems were often less comprehensive than large organisations. For example, the research went further to explain that, only 17% of SMEs include performance measurements in their formal health and safety compliance management systems compared with 71% of large companies. Figure 1 illustrates construction businesses percentage consideration for formal health and safety compliance systems.

Figure 1: Construction businesses percentage consideration for formal health and safety compliance systems; adapted from HSE (2003: 5)



The links between SME economic performance and compliance with safety

Taylor (2010: 136) opined that, non-compliance with health and safety leads to accidents, and workplace accidents have the potential to take 30% off company annual profits; also that failure to manage safety has a much larger social cost. Thus, the EASHW (2007: 9) claim that, ‘it is reasonable ... exceptionally effective and efficient

for SMEs to comply with health and safety regulations; because it helps build better business performance'. Moreover, research work by HSE (2005: 5) 'shows that, 60% of companies that have health and safety related disruptions lasting more than nine days go out of businesses'. Therefore, since SMEs generally lack readily available credit and often have weak economic performance, it is essential for them to understand the economic benefits of improving and complying with health and safety rules to boost their financial status (Dorman, 2000: 13).

A study conducted by Elias *et al.* (2011: 3 - 34) that examined a total of 79 contractors of various sizes, found that the cost benefits of compliance with health and safety (commitment/improvement to safety) outweighs the cost of accidents or costs of safety in the event of adverse safety by a ratio of approximately 3:1 (62% benefit gain to 38% benefit loss). In addition, Ikpe (2009: 201) affirmed that, the benefits of accident prevention (that is compliance with safety regulations) far outweigh safety costs of accidents by a ratio of approximately 3:1. Philips (2011) findings suggest that, compliance with health and safety leads to substantial cost savings. While, Purvis (1999: 5) in an article titled, 'Safe firms have healthier profits' argued that 'British businesses need to understand that good health and safety management is worthwhile ... (if compliance with health and safety is) handled in the right way, it can be turned from a cost into a benefit'.

However, the EASHW (2009: 5) stated that compliance with health and safety is not usually viewed as a contributory factor to viability of SME economic performance. Young (2010: 25) asserted that, attempts to link compliance with health and safety to economic performance of SMEs is usually characterised by absurdity and confusion. Dorman (2000: 1) argued that, linking economic performance with compliance is relatively challenging because most firms lack foremost knowledge on how to set and measure key health and safety performance indicators. However, he also argued that, 'financial issues that arise from health and safety matters are purely issues of economics and can be used to measure the healthiness of business, since they stem from the workplace, which is an economic activity'. Thus, Koper *et al.* (2009) stated that 'compliance with health and safety should contribute significantly to performance aspects ... measured based on factors, such as overcoming absenteeism, overall cost reduction, productivity and profitability.'

EASHW (2009: 13) stated that, evaluating SME's compliance with health and safety with regards to their economic performance is demanding because of (a) the diverse nature of SMEs, (b) lack of formal safety knowledge, (c) the dynamic and flexible operations of SMEs (d) ability of such businesses to innovate because, such enterprises are more traditional in nature based on family involvement and rooted in local business environments, and (e) lack of accounting and performance measure knowledge. Nevertheless, the Construction Clients' Group (CCG 2008: 1 - 2) proposed table 1, to illustrate how key health and safety performance indicators can be measured.

Table 1 Health and safety KPI's adapted from CCG (2008: 1- 2)

Objective	UK KPI	Rationale for clients' interest and recommended action
1. Training and competency	a. Maintain: Average CSCS or equivalent H&S test card	Ensuring that the right and best people are employed to deliver projects
2. Minimise impact on neighbours and local communities	b. Maintain: 80% signed up to organisations that promote public and private sector clients best practice	Ensure that construction projects have minimum impact on neighbours, environment; respect for people, good welfare and safety standards
3. Proactive and sensible risk management of all health and safety risks	c. Increase: encouragement of firms that have overall risk register inclusive of design details key risks for the project team to manage	Ensure health and safety is incorporated into project risk registers
4. No incidents. Reduction of accidents	d. Reduce: the reportable injury frequency rate and numbers of days lost to ill-health year on year and target zero incidents	Minimise potential injuries and ill-health during construction, maintenance and demolition
5. Respect for people	e. Improve: increase access to occupation- ill-health support: measure employee satisfaction, staff turnover, sickness, working hours and training	Promote respect for people in projects so they are well motivated, productive, trained, treated fairly and enjoy their work
6. Maintain statutory compliance	f. Reduce: the number of prosecutions and enforcement notices from authorities by 10 % year on year	Set the tone that compliance is the minimum standard. Improve the image of the dangers associated with construction. Minimise unwanted disruptions to projects.

The Occupational Health and Safety Administration (OSHA 2009) maintained that, economic performance of SMEs in relation to compliance with health and safety can be assessed or measured using various methods. The EASHW (2009: 5) referring to the work of Warren (2005) proposed a logic model for measuring economic performance of SMEs with regards to compliance. Thus, a relationship can be deduced between compliance with health and safety and financial/social performance, using a set of determined factors such as inputs, activity outputs and outcomes made of flow processes, as illustrated in table 2. Aldana (2001: 296 - 320) argued that, linking SME compliance with health and safety and economic performance should take into account ‘... the number of accidents associated with SMEs, their poor financial performance and their lack of knowledge about occupational safety’. In this regard, Dorman (2000) stressed that, in order to have a better understanding on how to measure the economic performance of SMEs with regard to compliance with health and safety, ‘it is imperative to promote effective compliance with health and safety culture within an organisation and the cost of health and safety should be made an economic internal variable and should be routinely visible’

Table 2: An examination of health and safety compliance input and economic performance outcomes for SMEs adapted from EASHW (2009: 6)

INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES
Money	Training	Number of staff trained	Reduced sick leave
Staff	Investments	Number of investments undertaken	Higher performance/Productivity
Equipment	Maintenance	Number of equipment maintained	Increased profit
Supplies	Interventions	Types of interventions undertaken	Lower liabilities
Facilities			Healthier workforce
			Consistency in performance
			Better performance
			Fewer injuries
			Increased output of goods and services

METHODOLOGY AND FINDINGS

This study research technique is based on a literature review and an initial appraisal of 2,646 prosecution cases on the HSE website (HSE 2011) leading to court sentences, and fines. The cases involved: civil engineering construction companies, building construction firms, specialised construction (demolition) firms, electrical installations companies, plumbing and heating firms and other types of construction specialist firms. This study restricted itself to 627 cases in the category of building construction (residential and commercial buildings development projects) in which 525 cases was deemed to be relevant to this study, as illustrated in table3.

Detailed analysis from data obtained shows that 64.57% (52.19% + 12.38%) of fines by volume between the years 2007 to 2011 were incurred by SMEs. Furthermore, SMEs incurred 71.25% (61.48% + 9.77%) of fines by amount of money. Therefore, considering SME's high cost of human capital, insurance costs and scope of work with regards to their marginal profitability, such uneven cost has the potential to jeopardise SME financial performance.

Table 3: Analysis of remedial costs for non-compliance with health and safety involving building construction firms in the UK 2007 - 2011, data used for this analysis were obtained from HSE (2011) data base.

Enterprise category	Number of HSE cases/ prosecutions between 2007 to 2011	Total costs of safety fines 2007 - 2011; £	Remedial cost of each accident; £	Percentage cases for each category by number	Percentage cases for each category by £s
Large firms	46	1,591,600	34600	8.76%	22.00%
Medium-sized	274	4,446,139	16227	52.19%	61.48%
Small	65	706,415	10868	12.38%	9.77%
Micro/individual	140	488,243	3487	26.67%	6.75%
Total	525	7,232,397	13776	100.00%	100.00%

Findings from table 3 show unanimity with other literature and confirm that SMEs are more susceptible to adverse economic performance due to non-compliance with health and safety regulations. The findings of Dorman (2000 p. 22), Smallman and John (2001), BERR (2008: 22) and Arocena and Nunez (2010: 414) are confirmed; there is need for SMEs to comply with health and safety because it reduces overall costs, improves availability of resources and heightens the effectiveness of their performance. In addition, research conducted by the HSE (2005) in relation to cost of safety revealed that, the amount of resources invested in health and safety has links with the size of firms. Large construction firms have the impetus to invest in health and safety (that is, they have well trained staff, better risk assessment structure and ability to purchase better working equipment/tools). Hence, there is that tendency for large firms to have better economic performance compared to SMEs.

DISCUSSION AND CONCLUSION

Findings from this study reveal that, remedial cost of non-compliance with health and safety tends to be higher per accident in SMEs than in large firms. SMEs are less knowledgeable on the need to invest in health and safety programmes. Moreover, most SMEs do not consider performance measurement as part of formal health and safety compliance systems. Dorman (2000) stressed that, it is imperative to promote investment in health and safety within small businesses and the cost of complying with safety should be made an economic internal variable and be routinely visible.

There is need for health and safety regulatory bodies to constantly and consistently echo the benefits of investment in healthy and safety to SMEs. It is therefore, recommended that more specific advice and guidance be developed to raise awareness among SMEs about the importance of investment in safety, performance target setting and evaluation in relation to compliance with health and safety rules and regulations (HSE 2003:49). Government may consider compelling SMEs to develop formal health and safety compliance management systems. There is evidence that the risk of suffering an occupational accident and the likelihood of adverse economic performance is greater in SMEs than in large enterprises.

Since safety management systems promote other facets of good management practice, such as advanced planning and clean places of work, there will spin off into worker motivation, efficiency, effectiveness and productivity. Safe companies are highly valued by clients, and there is also the potential to use evidence of robust safety systems as a vehicle to secure new work. It is argued that money spent on safety

management systems, alongside money invested in many other business systems that sensibly promote good practice, is money well invested, and will show returns in profitability. Many returns on investment are intangible, and the difficulty therefore is in measuring and convincing business leaders of the benefits, particularly in the SME sector.

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