Evaluating the Effectiveness of Health and Safety Practices in Reducing Workplace Risk: A Case Study of Thomas Armstrong (Holdings) Limited Company, United Kingdom

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ABSTRACT:
This research aimed to examine and evaluate the influence of leadership on the effectiveness of health and safety practices to reduce workplace risks in construction companies. Thomas Armstrong (Holdings) Limited, was used as a case study. A literature review has been carried out to determine the effectiveness of health and safety processes in UK construction companies. The research results show that some of these health and safety practices have failed in construction companies due to negligence from the management. Poor leadership and improper supervision have contributed a lot to failures in health and safety practices. As such, most construction companies cannot avoid injuries in their companies. The most common injuries in construction companies are those related to the mechanical operation, concretes, excavation, and blasting process. Due to confidentiality in data, the research tries to compare and evaluate health and safety practices in UK construction companies about Thomas Armstrong (Holdings) Limited. The final result shows that leadership plays a significant role in health and safety practices for reducing workplace risks. Division of labour (responsibility) plays an important role too. The managers are the head who must evaluate potential risks and find a solution to resolve them. The role of supervisors is to guide, supervise, and advise employees about possible risks. They also have the responsibility of risk assessment and recording. They have to provide all the training and necessary skills required for employees to perform their duties effectively.

Keywords: Health, Safety, Thomas Armstrong Limited, United Kingdom, Construction.


INTRODUCTION
This research was aimed at examining and evaluating the effectiveness of health and safety practices in construction companies in reducing workplace risks. This research specifically focuses on Thomas Armstrong (Holdings) Limited as a case study [1,2,3,4]. A systematic review of the past literature was conducted to determine how leadership in a given company can influence health and safety practices in a construction environment.
Thomas Armstrong is the founder of the business and the company was named after him. The company was founded in the year 1830 in Cockermouth and the company consists of different sections/departments, including sawmills, joinery works, construction of roads and bridges, timber and slate merchant, and explosive agents among others [5,6,7,14].

According to the UK Health and Safety in Working Environment Act (1974), guidelines must be followed and ensured to the protect health and safety of individuals at work [2]. To ensure and guarantee a safer working environment in any construction company, health and safety measures need to be successful [7,8,9]

Knowledge from the past literature highlighted the best possible way to avoid potential injuries and risks is to ensure that rules and regulations for the effectiveness of health and safety and their procedures are followed accordingly [10, 11, 12]. According to Toellner, [13], the best way to measure how effective the practice is to look at the injury statistics. Toellner [13], identifies some kind of safety metrics, these metrics are divided into two basic groups: (1) The leading indicators which are connected to preventive measures; (2) Lagging indicators which are connected to the outcome of an accident.

The lagging indicators are likely to be less accurate due to unprofessional data handling or other influences in the process of accident recording. While leading indicators are those related to the measurable system or behaviour of individuals connected to accident prevention. The key objective of leading indicators is to maximize safety performance by reporting, measuring, and managing positive safe behaviour [13].

Health and Safety Executives who monitor most companies play a significant role. This could be used in the same manner as other businesses. It is difficult to have reliable measures to measure health and safety in any working environment. “Balance Scorecard” is an important tool to measure the performance of health and safety [14].

Aims

The main purpose of this research is to examine and evaluate the effectiveness of health and safety practices, management, and supervision in Thomas Armstrong (Holdings) Limited, Company. Some of the problems analyzed are:

- How effective is health and safety practice in Thomas Armstrong (Construction) Limited, Company?
- Influence of leadership, supervision, and teamwork in the effective and successful implementation of health and safety practices.
- Why are failures in health and safety practices in most construction companies?

Objectives

To achieve the above-stated aims, the following objectives have to be accomplished:

- Literature review on the health and safety practices in UK construction companies.
- To evaluate the effectiveness of health and safety practices in Thomas Armstrong (Holdings) Limited.
- To compare Health and Safety Management in UK companies and that of Thomas Armstrong (Holdings) Limited.
- To examine the influence of leadership, and supervision in the successful implementation of health and safety practices in Thomas Armstrong (Holdings) Limited.

HEALTH AND SAFETY POLICY IN THOMAS ARMSTRONG (HOLDINGS) LIMITED

Workers employed in Thomas Armstrong (Holdings) Limited perform different activities within the company. As such health and safety, measures must come in place regardless of which section of the company they work for [1].
It is the company’s responsibility to practically measure and ensure that all workers comply with the safety rules. This is done to ensure the health; safety and welfare of all employees are taken into consideration. Below are the undertakings and laws at Thomas Armstrong Limited [11].

- The company will provide relevant information, instruction and supervision to safeguard the health and safety of workers [2,3]
- To provide an environment that could promote standards of health and safety across all activities within the company [2,5,6].
- Provide a safe environment without any risk to the employees or management health [11].

Thomas Armstrong Limited ensures all the implemented safety policies are duly complied with. The company designed a body and procedural planning that will make it mandatory for all workers to comply with the safety rules at every workplace within the company [7].

Although health and safety is the responsibility of everyone within the company, some of these health and safety processes might not be quite effective. This might come as a result of poor organization, lack of good leadership, lack of good communication, and non-compliance with health and safety rules [11].

According to Lyall who is a Director for Health and Safety at Thomas Armstrong Construction Limited, health and safety responsibility in the company rests on the shoulders of those that manage and supervise activities within the company [6]. The Group Safety department of Thomas Armstrong Limited has the responsibility to advise and instruct workers/employees at all levels to ensure that health and safety are duly and effectively observed with their implementation in all departments of the company [6,8,9].

The issue of health and safety in most companies of the world is well documented. There are a lot of regulations aimed at reducing the risks in the working environment. Some companies are successful while others are less successful [1]

**HEALTH AND SAFETY FAILURES IN CONSTRUCTION COMPANIES**

The reason why some construction companies are successful in their health and safety regulations is just compliance with the health and safety rules within the company [3,4,5]. Those companies that are not successful or less successful in health and safety practice and management in workplace accidents result from the following factors [12, 13,14]:

- Lack of good leadership.
- Poor organisation.
- Poor management.
- Lack of trained health personnel.
- Behaviour and attitude of employees.
- Lack of good communication.
- Lack of discipline.
- Lack of certified trained mechanical/equipment operators.

Whenever the above aspects fail to work appropriately, there is likely every chance accident might occur. Therefore, all the managers, leaders and team leaders are responsible for identifying issues that may trigger accidents within a company [6].

Construction companies contribute immensely to any country’s economic growth and development. This involves the demand for highly skilled workers who most of the time are exposed to high-risk tasks. Their works involved the use of machinery, trucks, track lifts, and folk lifts, as in the case of Thomas Armstrong (Concrete) Limited [1,2,6,8].
Construction companies have failed considerably in their health and safety departments with the risks of around 40% recorded between 2013 and 2014 [13]. Some cases of fatal injuries between 2013 and 2014 cost amount of over £1.1billion [5]. The below figure shows recorded fatal injuries from 1974-2010.

![Figure 1. The Number of Fatal Injuries Recorded [13].](image)

About 50 construction sites in the UK have failed the standard of health and safety in the country [1,2]. This is a result of poor management and poor health and safety practices from the UK construction companies as shown in above figure 1. Safety notices were issued to stop the bad practices and improvement should be ensured to meet the standard requirements for health and safety [10].

**HEALTH AND SAFETY FAILURE IN THOMAS ARMSTRONG (HOLDINGS) LIMITED**

Health and safety practices have been failing irrespective of the company type all over the world [7,8]. Likewise, the health and safety practice has failed at Thomas Armstrong Limited [1]. Due to the privacy/confidentially of the company data, there is no opportunity to examine the main injury causes in Thomas Armstrong Limited. Nevertheless, some of the reasons why health and safety failed in Thomas Armstrong are highlighted below [1,13,14]:

- Lack of discipline from the employee. Discipline must be enforced.
- Lack of trained personnel.
- Improper Risk Assessment.
- Attitude and behaviour of workers.
- Leadership and Lack of good supervision.
- Lack of certified machine operators.
- Lack of protective equipment.

Some of the injuries that occurred in Thomas Armstrong Limited are those related to lifting/moving objects, concrete truck lifts and forklifts, scratches, excavation and blasting processes, chemicals, heavy metals, muscular-skeletal, respiratory irritation, mechanical injury, and electrical injury [9]. Most of the injuries recorded are from mechanical and excavation processes yielding 40% of the total injuries recorded in the companies [6]. Another 30% occur as a result of un-protective equipment or instance, lack of visibility clothes, steel toe-capped boots, and hard hats [3,4].
However, managers, supervisors, and senior officers are aware of the condition and are trying to find alternative ways to resolve the issue [1]. Quarterly meetings have been organized in the company where team leaders and supervisors will meet to discuss all the related issues relating to the outcomes of the meeting will serve as guidance to prevent risk injuries within the company [10,11]. In 2004, team leaders, supervisors, and other senior staff of the company were sent abroad to attend the symposium, seminars, workshops training, and other health and safety-related courses [7].

HEALTH AND SAFETY MANAGEMENT IN UK CONSTRUCTION COMPANIES

Construction work is innately hazardous; injuries are unavoidable in all construction sites [1]. For the past few years, construction companies have had a record of poor health and safety. The construction management must ensure a safer working place as well as adopt a more practical health and safety attitude [1].

Health and safety management has been an issue throughout the UK construction industry [1,2]. There is a desire to maintain good health and safety management within any industry. With the recent implementation of the revised construction design management (CDM) regulation 2007, most of the focus has turned to health and safety as the core element when awarding a work [10]. The duties of CDM are to identify any prospective hazards to health and safety throughout the construction process. The CDM procedures involve two phases approach, the planning, and management [1].

In the United Kingdom, there are three main principle mechanisms of legislation guiding and ensuring the effectiveness of health and safety at work. The mechanisms are enforcement agency, employee involvement, and proper regulation from the employers [2]. Health and safety law enforcement under the Health and Safety at Work Act 1974 established two frames, Health and Safety Commission (HSC) and Health and Safety Executive (HSE). The two established bodies work simultaneously; HSC was designed to administer the law, while HSE was designed to enforce the law [13].

After the introduction of these two bodies, there are obligations placed on employers and employees in trying to minimize health and safety risks in the workplace [2]. According to HSE UK, the responsibilities of employees in managing health and safety include:

- Responsibility for their health and that of others.
- Must cooperate with employers on health and safety matters.
- Must use all the equipment diligently and wear protective wear if necessary.
- Should not interfere with any materials unless instructed to do so [2].

The preliminary risk assessment was designed to forecast potential risks before the construction begins. The primary assessment proceeds to categorize each type of risk thereby establishing appropriate safety measures in each case [9]. The below figure shows risks assessment procedures.

Figure 2 above shows the risk assessment procedure carried out in companies. There is a risk management plan that measures and grades the minimum, average, and serious danger risk. However, unceasing management is still vital to prevent future risk, even if the danger is categorized as permissible risk, preventing it would help to avoid graduating to average or serious risk [9]. The below figure shows some risks and their grades. Classification and index of each risk probability.

Figure 3 shows some grades from A-D which are to donate the degree of risk with a numerical digit to show the severity of the risk.
Leadership plays a significant role in health and safety management. The management system is the most important for all employees. The managing Directors and senior Staff/Officers in each section of the company have the responsibility to manage and keep the basic standard of the company by the legislation rule [10,14]. They also have the responsibility on their shoulder to lead others by example. This could help improve health and safety within the company. This should be carried out like that, but it must have set objectives and how to monitor the performance of each activity in the company [7].
There is a positive aspect in Thomas Armstrong (Holdings) Limited when it comes to leadership and division of labour. All activities within the company are distributed and assigned. For instance, directors, senior managers, departmental managers, and supervisors are the ones responsible for health and safety. They contributed immensely toward achieving a proper safe working environment [7].

For every policy to work properly after implementation, the principal officers must exercise their duties accordingly. The below figure shows the principal officers in Thomas Armstrong (Holdings) Limited each with his responsibilities.

Figure 4. Organizational structure and Leadership for Health and Safety in Thomas Armstrong Limited [14].

Figure 4 above shows the leadership structure and management in Thomas Armstrong Limited. The roles are based on the hierarchical order.

**MANAGEMENT RESPONSIBILITIES, LEADERSHIP AND SUPERVISION**

Every manager, director, or supervisor has the following designated responsibilities:

- To ensure the health and safety of all permanent and temporary staff who might be affected by any injury within the company. The manager has the authority in this case.
- To ensure there is proper arrangement for an emergency for a place to deal with accidents and other emergencies if required.
- Good publication of safety instructions.
All materials/machinery/equipment purchased or yet to be purchased must comply with the legislative rules and their manufacturer’s recommendations. Information on materials must also be available and understood by all employees.

Special attention must be given to young and inexperienced workers.

All the lifting equipment such as excavators, cranes, tract lifts, and forklifts need to be examined and tested. They also need to be inspected for a proper check-up by Lifting Operation and Equipment Regulations 1998.

The company machine operators must show evidence of training and assessment which must be acceptable under the industry scheme. For instance, CPCS, RTITB, LANTRA, and IPAF [7].

RESPONSIBILITY

The Department of Health and Safety has the responsibility for good maintenance and consistent and systematic review of the policy. There should not be any implementations, or amendments, which should be guaranteed approval without consideration from the director responsible for safety. All safety documents must be reviewed after every year. The responsibility of each employee is clearly stated in the policy and should familiarise themselves with their role.

CONCLUSION

This research was carried out based on health and safety in construction companies with Thomas Armstrong (Holdings) Limited Company used as a case study. This research has revealed that most construction companies have failed in their health and safety practices. This is due to poor management, improper supervision, indiscipline from the employees, lack of trained personnel, and lack of trained equipment and machine operators among others. To ensure a safer working environment, health and safety regulations must be duly followed. The research showed that proper management and supervision could reduce health and safety risks in construction companies. From the result of the research, it was discovered that most of the injuries in construction companies are from mechanical operations, concretes, blasting, and excavation processes. Due to data confidentiality, there was no opportunity to see the statistics of injuries recorded. Nevertheless, there was an opportunity to compare different companies and evaluate the effectiveness of health and safety practices in reducing workplace risks in construction companies. Lastly, it shows that the performance of health and safety depends on management, leadership and supervision. Leadership plays a significant role in the implementation of health and safety policies. The management is responsible for reducing risks in workplaces.

REFERENCES


