

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

To what extent do correlations exist between quality defects and health and safety incidents

Sources estimate approximately 5% of project costs within the construction industry are generated by rectifying quality defects, with reworks classified as the primary source of programme over-runs. Similarly, the Construction industry is the highest industry contributor to workplace fatal and non-fatal injuries in the UK, accounting for an average of 29% of fatalities over all 7 main industries recorded since 1987. These statistics demonstrate the failure of the industry to deliver on 2 of its 4 core values: safety, quality, cost, programme.

The purpose of this paper is to study correlations, if any, between the occurrence of quality defects and fatal and non-fatal health and safety incidents. A literature review is undertaken to assess the key contributors to failures in quality and health and safety performance. A key finding is the commonality between processes and procedures between the two disciplines and the underlining root causes of failure in both disciplines. A detailed case study is presented for a main contractor focusing on 72 construction projects and 2 manufacturing facilities. Utilizing JASP software, correlation analysis is performed to assess correlations between the number of quality defects encountered for a variety of different severity classes of health and safety incidents. The case study finds insufficient data is available to confirm correlations between the occurrence of quality defects and health and safety incidents which result in lost time, however, a medium to high correlation can be seen between the occurrence of quality defects and the occurrence of minor safety incidents and accidents. Additional research identifies few health and safety incidents are a direct result of rectifying poor-quality work however, a poor behavioural safety culture is a secondary finding with respect to the occurrence of both incident types. The paper concludes with recommendations for further area of study.

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