

Safety Culture within Multi-stakeholder Environments: Maturity Assessment Tool Trial

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SUMMARY

Safety improvement is required for UK construction Project Delivery Organisations (PDOs). However, existing safety culture maturity tools tend to focus on a single organisation and have not been thoroughly tested for PDOs which are multi-organisational, and time-bound. Stiles (2021) presented the first stages of development for a tailored maturity tool for PDOs. This paper gives an update on that work, presenting emerging outcomes of a pilot of that tool within 14 construction projects classified as normal commercial building and infrastructure projects.

KEYWORDS

Safety Culture, Multi-stakeholder, Construction

Introduction

Safety culture research tends to treat organisations as a single body, with less focus on the complexities and challenges of a multi stakeholder environment. One such example of a multi-stakeholder environment is a construction Project Delivery Organisation (PDO), where a number of companies are co-ordinated via contractual obligations for a determined period of time to deliver assets ranging from small works to major infrastructure build.

A programme of work (Stiles 2021) is developing a safety culture maturity tool tailored to the needs of PDOs. This is based on a pre-existing safety culture maturity model (Parker et al., 2006), which describes maturity at five levels described against 18 aspects of safety culture. Level 1 infancy, least mature progressing up to level 5 excellence, most mature. Stiles (2021) assessed these criteria for the relevance to PDOs. Specifically, this work identified 11 criteria that needed to be managed directly within a PDO, rather than managed by parent companies away from the project. Those criteria managed by the project remained within the revised maturity matrix. PDOs then rate themselves against each of the specific safety culture maturity criteria. The use of the tool supports each of the projects in having a project-specific safety culture intervention plan, matched to a range of mitigations identified from previous practice in safety. The tool is then used on an ongoing basis throughout the lifespan of the PDO to assess progress. Having determined the criteria in Stiles (2021), the rest of this paper describes a trial of the tool.

Trial of Maturity Tool within PDOs

This tool has been trialled with 14 non-complex construction projects (across commercial building and infrastructure engineering categories) for one Principal Contractor taking an exploratory case study approach. Figure 1 provides an overview of the different steps within the trial undertaken for each project. The assessments of safety culture maturity were repeated on a quarterly basis by each project throughout the whole lifecycle of a PDO throughout a 12-month period.

The pilot involved conducting baseline safety culture maturity assessments at the beginning of sample projects. Representatives from each PDO's Project Management Team were briefed on how to use the tool. The briefing included a general overview of safety culture and details of the areas

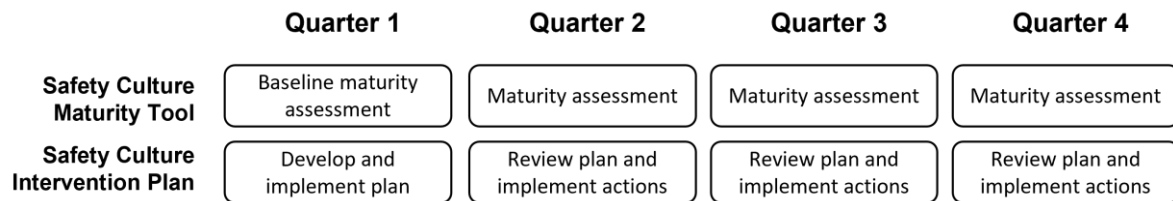


Figure 1: Overview of activities within the trial

included within the maturity matrix. The maturity matrix was made up of five areas: awareness of safety behaviour/culture, implementation of safety culture intervention plan, engagement, leadership and reporting culture. Each of these areas had a number of descriptive statements against the five levels of cultural maturity. Project Managers from each PDO would select the statement(s) that described their project for each of the five areas. These were then recorded into corresponding maturity levels using the maturity matrix – levels 1 to 5. The PDO also developed and maintained a project safety culture intervention plan throughout the study. These were reviewed quarterly by the researcher alongside the project team to identify which actions had been adopted by the project. A record of this review was maintained.

Outcomes and next steps

Evaluation of data for a 12-month period has identified different levels of maturity across all projects ranging from 1 to 5. The mean maturity level across all projects for the 12-month period was level 2. This could be a result of the number of new projects which had started up during the trial period, which typically are less mature due to characteristics of a PDO including unclear communication, responsibilities and contractorisation, (Stiles et al 2020). For quarter 1 and 2 assessments, projects tended to start with a lower level of maturity (level 1 or 2). The trial identified two groups of outcomes by quarter 3 or 4. For the projects that followed their intervention plan they showed progress up the levels by the quarter 3 assessment, attaining levels 3 or 4 maturity. For projects that did not implement their intervention plan, maturity levels remained largely unchanged. The differences between the two outcomes were found to be due to leadership commitment to their project adopting the intervention plan, continued levels of workforce engagement in safety, and/or any significant changes to the project e.g., change of personnel, additional project works to be completed with associated increased pressure to deliver. As projects neared completion the maturity levels remained static or even reduced due to the project management and workforce focus being largely on delivering work to meet the programme, with the activities perceived as 'non-essential' to this delivery being paused/stopped, including activities on the intervention plans.

Next steps for the trial involve a detailed comparative analysis of the level of safety culture maturity within each PDO and how specific interventions have led to change. Consideration should also be given to how can we ensure safety culture maturity tools reflect the latest safety adaptations and wider changes to operations the sector has made in response to COVID 19 (Stiles et al., 2020).

References

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