



**UNIVERSITY OF
CAMBRIDGE**

Department of Engineering

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

Understanding Workforce Motivational Factors to Incentivise Improved Productivity in Pre-cast Concrete Construction

Productivity is widely agreed as an important factor for the success of any business. Owing to the highly competitive environment in construction, all participants must improve performance to survive, one area being productivity. This can be achieved through management, design, methodology and emerging technologies, such as offsite manufacturing. One type of off-site technique gaining greater popularity is pre-cast concrete construction.

As pre-cast construction on-site is dependent on human contribution, it can be argued that labour is the only productive resource. Thus the behaviours and motivation of the workforce may significantly affect the project outcome.

Development of this study is driven by the belief that much attention is paid to construction solutions and methodology while little is given to ensuring the best results are achieved from the available human resource. This research aims to generate an understanding of both motivational and productivity factors of pre-cast concrete workers in the UK, to inform incentivisation of productivity improvement. A quantitative method was developed to establish factors that can serve to design an appropriate incentive scheme to improve productivity within this workforce group.

Following a desk-top study, interviews, workforce questionnaires and site trials, critical factors are established. From this study it was evident that there are differing drivers dependent upon age, experience, trade and background (nationality). The regression analysis identified three factors, perceived important by respondents, with significant relationship to age and experience, namely: (1) Good communication, (2) Quality of Work Done, and (3) Opportunity for Promotion. The nationality and trade of a worker also provides an insight into their perception of motivating factors. As such, providing the right working environment by removing de-motivators will assist productivity.

The use of incentives, applied in the correct manner, can bring benefits to project productivity. Completed site trials demonstrated that no scheme would satisfy all situations. However, the results of this and wider research demonstrates that there is a compelling argument to invest in worker incentivisation to maximise productivity.

Thomas Mullens

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