



How increasing autonomy in the construction industry can deliver benefits and maintain productivity

The challenge to industry

The Construction Industry Training Board (CITB) estimate 182,000 new jobs are needed across the UK construction industry by 2021 (CITB, 2015), with UK infrastructure projects alone requiring 100,000 new workers, and the retention, retraining and up-skilling of 250,000 existing workers over the same period (Treasury, 2015).

However, a culture of long working hours and inflexibility affects staff retention and discourages new talent, including women who are under-represented in the industry. In addition, staff losses waste time and money, hampering growth.

The effects of long working hours and inflexibility must be offset to reduce conflict for individuals and improve wellbeing to support the broader industry goal of retaining and attracting talent to deliver the government's Industrial Strategy: Construction 2025 vision.

The proposed solution

Wellbeing and work-life balance are inextricably linked to productivity, sustainability and profit. This research project proposes that increasing an employee's autonomy – allowing a sense of flexibility and control over their working arrangements – benefits individual wellbeing while maintaining productivity. Improving wellbeing provides an opportunity to help construction businesses attract and retain talent leading to improved productivity and growth.

The approach

Previous research shows that autonomy helps individuals balance the demands presented by a lack of flexibility and long working hours; autonomy is linked to overall job satisfaction and employee motivation. Employers can currently offer workers more autonomy via formal flexible working arrangements (FWA), which became a legal requirement in the UK in 2014.

This project, which employed a philosophical and methodological approach, posed the following questions:

1. What effect does increasing autonomy have on employee wellbeing in a highly constrained construction project environment?
2. How does increased autonomy affect productivity?
3. How does increased autonomy influence the number of hours individuals work?

Productivity and performance

The research comprised:

1. Sample group: 11 individuals who held a variety of delivery roles with differing amounts of industry experience and represented approximately five per cent of the total civil and structural engineering population within Laing O'Rourke's infrastructure business unit.
2. Control group: 52 individuals selected from all engineers on equivalent rail infrastructure projects in Laing O'Rourke, performing similar civil and structural activities for the same client and experiencing similar project pressures.

The sample group was given complete autonomy compared to the control group, which followed a traditional work arrangement on a live construction site. Research was conducted over a 12-week experimental phase.

Two measures of wellbeing were used. The first was based on a modified World Health Organisation scoring system which was given to the sample group only as part of an end-of-day diary return. The second was a work-related feelings scale given to the sample group in four surveys at 28-day intervals and to the control group at the beginning and end of the 12-week experimental phase. Semi-structured workplace interviews were also held with each sample group participant at the beginning and end of the experimentation phase.

Two measures were used to determine the productivity performance of the sample group; one was the overarching contract programme and the other was an individual weekly workplan (WWP). The contract programme is a contractual document updated by the project delivery team and the dedicated project planner. The WWP productivity measure was based upon the lean construction template and completed by each participant, capturing individual activities, and processed to calculate the individual and overall percentage plan complete (PPC) figures.

These two measures provided an understanding of the macro project environment and micro personal level performance which was used to establish what impact increased autonomy had on productivity. Working hours were also recorded. The results of the sample group were compared with those from the control group to improve the interval validity of the results.

Impact of autonomy

When reviewing the work-life balance, wellbeing and work-related feelings results, the sample group which had been given more autonomy experienced positive changes. The improvements in wellbeing occurred (with medium to large-effect sizes recorded) without negative impacts on productivity or overall hours worked.

These findings suggest that if a worker has autonomy, receives feedback, and has social support or high quality supervisor relationships then they are less likely to burn out through work overload, emotional or physical demands and work/home balance. The research showed that poorly-designed jobs exhaust workers' mental and physical resources.

Benefits to the construction industry

These evidence-based findings demonstrate positive implications for the future of the UK construction industry that engineering and project delivery personnel can achieve by providing greater autonomy which will improve wellbeing while achieving project goals.

Increased autonomy contributes to improving the overall image of the construction industry, which will help attract new talent. The global construction market is forecast to grow by more than 70 per cent by 2025 (Industrial Strategy: Construction 2025) and Britain is in a strong position to capitalise on this boom. Construction is a sector where Britain has a leading competitive edge, but maximising opportunity requires sustainable business models. There is a need to replace current outmoded practices with more progressive thinking. By providing increased autonomy the UK construction industry could offer a more appealing place to work and attract and retain the talent needed to drive business success.

The Laing O'Rourke Centre for Construction Engineering and Technology, in the University of Cambridge Department of Engineering, was launched in 2011 with industry partner Laing O'Rourke to fulfil a shared vision of transforming the construction industry through innovation, education and technology. The Construction Engineering Masters (CEM) degree programme is designed to shape the next generation of industry leaders and undertake innovative research projects that deliver value to industry.

Case study

This case study is based upon a Laing O'Rourke Centre for Construction Engineering and Technology Construction Engineering Masters dissertation titled: *The effect of increasing autonomy on wellbeing in a highly constrained construction environment* (2016). The research is by Joanna Vezey, Head of Talent, Inclusion and Social Sustainability at Laing O'Rourke.

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