

## **CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT**

### **Understanding the barriers that hinder knowledge sharing in the offshoring of infrastructure projects – A consultant’s perspective**

Packaging work within a project to an offshore office is quickly becoming the norm in the construction industry, and although this relocation of activities to a different country has many business advantages, especially in reducing project costs, there is evidence to suggest that the success of offshoring is highly dependent on the implementation of effective knowledge sharing practices within the project lifecycle. However, knowledge sharing in offshoring relationships are often difficult to manage, and exacerbated by geographical distance, language, and time differences, amongst other barriers not typically experienced in traditional project environments. These barriers hindering knowledge sharing can affect the performance of deliverables through rework and wastage, all of which are main contributors to non-conformities and inefficient processes. As a result, these projects are often at a higher risk to suffer direct and indirect cost implications, as well as client dissatisfaction from poor quality and delays. This research has therefore examined the causes of these barriers from a construction viewpoint, and the extent to which they affect knowledge sharing and subsequently, the performance of deliverables.

A mixed methods approach was adopted using an exploratory case study on Network Rail’s largest bridge management programme as a basis for the research, and centred around two types of work packages offshored to India as part of the project: Level 0s which were simple bridge assessments using standardised proformas; and Level 1s which were more rigorous assessments comprising multiple delivery stages. Semi-structured interviews were conducted with 12 team members from the UK project team to understand the perceived key barriers to knowledge sharing with their offshore colleagues in India. Various sources of quantitative data from existing Key Performance Indicators (KPIs), client review sheets, programme trackers, and fee trackers, were then examined to help draw a link between knowledge sharing practices and the performance of offshored deliverables.

The research presented a list of 13 key barriers identified from the qualitative feedback, which were ranked in order of the perceived impact on knowledge sharing using the Garrett ranking method. It was found that the barriers affecting knowledge sharing practices between the onshore and offshore team had a direct impact on the quality, programme, and cost of deliverables, indicating a clearly discernible link between knowledge sharing and performance. Poor ‘communication’ was identified as the highest ranked key barrier where the quality and type of communication was found to be more pertinent than its quantity and frequency, whilst a thematic distinction observed at a ‘Team’ level highlighted the importance of team operational factors in facilitating knowledge sharing. The findings also suggested that typical KPIs based on time, cost, and quality are unsuitable for measuring the true performance of an offshored project, because they are incapable of capturing the success of knowledge sharing practices. The conclusions offered solutions for the different methods and tools in which we can effectively disseminate and reinvest knowledge throughout the lifecycle of offshored infrastructure projects.