

Numerous studies have attempted to explain project complexity by exploring the various approaches adopted by researchers [1,2]. The theoretical perspective of project complexity; and the “actuality” of complexity within construction projects has been investigated in the literature reviewed, highlighting the lack of consensus on the subject matter [3]. According to Baccarini [4] complexity is one of the critical project characteristics that determine appropriate actions to result in successful project outcomes, with construction projects continuously displaying higher levels of complexity since the mid-1940’s. Many other researchers supported Baccarini’s [4] view that project success is dependent on the complexity of a project, having a direct effect on the overall project performance [1,5,6]. Recently, much of the research produced to date by the construction community has failed to consider the application of lean construction as a way to improve project performance by managing project complexity, ensuring the successful delivery of construction projects. Research undertaken by Smith et al [7] and Bhasin [8] supported this view, noting that the application of lean is what needs to happen for successful project delivery.

In recent years, an increasing amount of research has been undertaken in relation to the subject of project complexity [3]. When evaluating the issue of project complexity, researchers predominately focused on the core platforms of simple project complexity classification and complex systems theory [9]. Azim et al. [3] recognised a lack of agreement among researchers in relation to the definition of complexity. This observation was supported by Xia and Chan [2] who writes that project complexity has not been clearly defined. The only definition of complexity utmost acknowledged by researchers was that of the Oxford English Dictionary, which defined complexity as “consisting of many different and connected parts” and “not easy to understand, complicated or intricate” [3]. As a multi-dimensional concept, defining construction project complexity is incomprehensible. A recent study by Azim et al. [3] obtained several varying definitions of project complexity, with participant responses ranging from; a variety of people in terms of skills and experience, to a multidisciplinary, multi-national, multi-site and a lot of stakeholders. In review of the findings, Azim et al. [3] identified a direct link between project complexity and ‘people, products and processes’. Azim et al. [3] paper however would have been much more useful, had the authors not failed to consider the implementation of lean tools and techniques in managing people, products and processes of the project environment, which as acknowledged by Winter et al. [10] would subsequently reduce project complexity.

Wheeler [11] suggested that difficulties tend to surface throughout the project duration where the project is initially ill-defined. It is generally the negotiation and consensus building to overcome these difficulties, which result in the project being classified as complex. Dombkins [12] supported Wheeler’s [11] assessment, recognising complexity in projects as the unattainable act to undertake accurate detailed long-term planning. It must be noted; that the findings put forth by Wheeler [11] and Dombkins [12] might have been more convincing had they highlighted the need for the construction research community and industry to implement lean construction as a way to overcome project complexity in construction project delivery. Although extensive research has been carried out on project complexity, to date

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