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A Method To Assess Collaboration Using Perception of Risk from the Architectural Engineering Construction Industry

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Abstract : The use of Building Information Modelling (BIM) in the Architectural-Engineering-Construction (AEC) industry is a form of systemic innovation. Unlike incremental innovation, (such as the technological development of CAD from hand based drawings to 2D electronically printed drawings) any form of systemic innovation in Project-Based Inter-Organisational Networks requires complete collaboration and results in numerous benefits if adopted and utilised properly. Proper use of BIM involves people collaborating with the use of interoperable BIM compliant tools. The AEC industry globally has been known for its adversarial and fragmented nature where firms take advantage of one another to increase their own profitability. Due to the industry's nature, getting people to collaborate by unifying their goals is critical to successful BIM adoption. However, this form of innovation is often being forced artificially in the old ways of working which do not suit collaboration. This may be one of the reasons for its low global use even though the technology was developed more than 20 years ago. Therefore, there is a need to develop a metric/method to support and allow industry players to gain confidence in their investment into BIM software and workflow methods. This paper departs from defining systemic risk as a risk that affects all the project participants at a given stage of a project and defines categories of systemic risks. The need to generalise is to allow method applicability to any industry where the category will be the same, but the example of the risk will depend on the industry the study is done in. The method proposed seeks to use individual perception of an example of systemic risk as a key parameter. The significance of this study lies in relating the variance of individual perception of systemic risk to how much the team is collaborating. The method bases its notions on the claim that a more unified range of individual perceptions would mean a higher probability that the team is collaborating better. Since contracts and procurement devise how a project team operates, the method could also break the methodological barrier of highly subjective findings that case studies inflict, which has limited the possibility of generalising between global industries. Since human nature applies in all industries, the authors' intuition is that perception can be a valuable parameter to study collaboration which is essential especially in projects that utilise systemic innovation such as BIM.

Keywords : building information modelling, perception of risk, systemic innovation, team collaboration
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