

Attempting to Define “Small Project” in the Industrial Construction Sector

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Projects considered “small” are a substantial portion of completed projects in the industrial construction sector each year. Small industrial projects oftentimes have poor cost and schedule performance due to a lack of sufficient front end planning. In 2013, the Construction Industry Institute (CII) tasked Research Team 314 to develop a front end planning tool specifically for small industrial projects. This Project Definition Rating Index (PDRI) for Small Industrial Projects tool will complement the previously developed PDRI for Industrial Projects, which was created for use on larger, more complex projects. An imperative aspect of the research was to determine specifically how to define a “small industrial project” for the purpose of guiding PDRI users to the appropriate tool when planning an industrial project. Based on a review of literature, little academic or industry research had been published regarding small projects. A consistent small project definition was not evident in the literature, but various metrics were posed as ways to define a small project. An online survey was developed by the research team to discern what metrics or methods industrial construction practitioners currently employ to differentiate between small and large projects. Practitioners from CII member organizations were procured through purposive sampling to complete the survey. Participants were asked to consider 14 separate metrics (taken from the existing literature) that could possibly be used to differentiate between small and large projects, one example being total installed cost of the project. Each metric had a “break point” listed that could separate small and large projects, an example being small industrial projects have a total installed cost less than or equal to US \$10 million, and large industrial projects have a total installed cost above US \$10 million. Participants were asked (1) if they agreed that the listed metric could be used as a differentiator between small and large projects, and (2) if they agreed with the break points listed. If the respondent agreed with the metric but disagreed with the listed break points, they were asked to provide the break points that they felt were appropriate. Participants were also asked to provide any additional metrics or methods that their organizations used to differentiate between small and large projects. Ninety (90) industry practitioners, split between industrial owners, contractors, and engineers, responded to the survey. Total installed cost, schedule duration, and level of funding approval were agreed upon by a majority of the survey respondents as metrics used in their organizations to differentiate between small and large industrial projects. Five metrics had total agree/disagree responses that were very close and could be considered possible differentiators: engineering effort, impact to operations, team resources availability, core team resources numbers, and experience with project characteristics. Respondents clearly disagreed with six metrics: regulatory/environmental permitting, risk to reputation, project visibility to owner management, team expertise, core team makeup (engineering and craft), and stakeholders impacted. Respondents disagreed with the numerical break points of all five metrics to which these were pertinent; total installed cost, construction duration, engineering effort, core team resources numbers, and core team makeup (engineering and craft). A wide range of suggested break points were provided for each of the numerical break points. Total installed cost suggestions ranged from \$200,000 to \$250 million, for example. Several survey respondents noted that measures of project complexity might be a more appropriate method to differentiate between small and large projects. The survey results show that using specific metrics and associated break points may not be an appropriate way to definitively differentiate between small and large projects. This is due to the substantial range of small project definitions across the industrial construction sector. The survey findings add to the limited knowledge base of small project research. Future research regarding using measures of project complexity to determine project size is suggested.

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