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# The Impact of the Covid-19 Pandemic on Construction Labor Force and Performance Metrics: A Case for Automation

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## ABSTRACT

Pandemics, such as Covid-19 virus spread fast with significant impact on people and the economy. The construction industry with productivity stagnation of over two decades is not excluded from this significant impact or restrictions that determine the present way of life. These restrictions (e.g., government shutdowns, social distancing, and face mask requirement) impede several construction processes resulting in scheduling restrictions, increased work-related hazards, and developing challenges helping to sabotage existing labor force shortage issues. Consequently, researchers and practitioners have focused on low-risk activities, staggered schedules, etc. However, there is a need to appraise the impact of Covid-19 on construction labor force while making a case for construction automation. In this study, the authors utilized a state of practice review of Covid-19-related developments (i.e., disruptions, standards, and regulatory practices) within construction, along with qualitative and quantitative approach among twelve professionals. The study identified productivity, safety, and quality concerns affecting the

construction workforce before proposing a workflow for increased automation within the industry to deal with the present and future pandemics. The findings demonstrate the need and emphasize the importance of embracing automation for construction processes in phases that can improve labor force issues and performance metrics to change the path for lingering concerns in construction.

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