



THE APPLICATION OF DRONE TECHNOLOGY IN CONSTRUCTION PROJECTS: RISK MANAGEMENT APPROACH

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ABSTRACT

This paper is designed to explore the use of drones' technology in construction projects as a risk management tool in the events of pandemic. The intent is to understand the perceptions and attitudes of the key stakeholders of construction projects regarding the use of drones' technology for inspecting construction projects. Recent lockdowns and social distancing guidelines in several countries around the world have increased the adoption of new technologies to overcome the challenges faced by businesses to continue their ordinary operations during these unexpected periods. One of these are the challenges facing construction projects as for being physically present at the construction site to conduct site inspections. Artificial intelligence, robots, and state of the art communication technologies are increasingly adopted in businesses as part of their risk management activities to overcome these challenges. Recent literature on the utilization of drone technology in operations used the concept of "Dronification" to indicate the process of utilizing drones or "Unmanned Aerial Vehicles" (UAVs), to capture images and videos to serve several complex business operations. In this regard, the utilization of drones' technology may be viewed as an essential tool for inspections during the periods of lockdowns and social distancing. In addition, this technology may be utilized to improve the quality of the inspection by obtaining information and detail that may not be readily obtained without expensive access methods and sometime the interruption of the service is required. This technology can aid structural engineers in performing different nondestructive tests and plan future destructive ones. Also, using drones would be considered as beneficial in highways and bridges inspections where safety is a major issue.

KEYWORDS: Risk Management; Drone Technology, Construction Projects; Artificial Intelligence; Robotic Process Automation.

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