IMPACT OF WORK FLOW DISRUPTIONS, PROJECT CHARACTERISTICS AND FOREMEN CHARACTERISTICS ON IMPROVISATIONAL DECISIONS AND ACTIONS ON CONSTRUCTION SITES

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Disruptions on construction sites are a constant issue and unfortunately can have negative impacts on the workflow and productivity of the impacted crews. As a result of these disruptions, foremen must quickly generate improvised solutions to the disruptions to keep the work of their crew progressing. Yet the mechanics of how exactly this improvisational decision making is occurring has not been previously studied. To address this void in the literature, this study examined the factors that may influence a foremen's ability to improvise, such as the type of disruption, the jobsite characteristics, and the personality, experience, and education of the foremen, in relation to the level of improvisation occurring. To accomplish this, this study collected data from 50 foremen within the electrical construction industry to measure to what degree they improvised and with what speed they improvised in response to their daily disruptions, resulting in 244 recorded disruption incidents. In analyzing these incidents with multilevel modeling analysis techniques, it was determined that the type of disruption did not have as large of an effect on the degree and speed of the resulting improvisation as originally
hypothesized. In addition, it was found that factors such as the level of cooperation on the job site, the time pressure on the foremen, and the level of collaboration on the job site influenced the degree and speed of the improvisation. Yet the factors that explained the largest total variance in both the degree and speed of improvisation were the personality traits of the foremen. Thus, these findings emphasize the importance of foremen on job sites, while also documenting how improvisation is occurring on job sites.