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Concurrence among designer and builder perceptions of occupational safety and health

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Occupational safety and health (OSH) effectiveness in construction requires concurrence among project stakeholders. Project stakeholders' perceptions of OSH during the design and build phases can influence effectiveness and OSH outcomes on a prototypical project. Therefore it becomes critical to identify whether designers and builders share consensus on OSH. The objective of this research is to provide quantifiable evidence of OSH perceptions through experimental investigation and comparison of design and construction stakeholders. To quantify evidence of OSH perceptions, the study examines choices made by design and construction stakeholders when asked to characterize hazardous conditions, technologies or both. The authors define OSH risk as exposure to a hazardous condition that may cause work-related injuries, illnesses, and fatalities. The experiment employs Q-method based photographs to elicit responses in depicting hazards as it has been shown that the pictorial nature of a graphical risk display ignites stronger associations with risk outcomes. Specifically, participants were asked to score 32 pre-justified OSH-related photographs in two rounds: one based on risk likelihood and the other based on risk severity. Analysis reveals that safety-critical roles in design and construction projects demonstrate certain degrees of intra group consensus concerning OSH risk. The resulting consensus is consistent with sociological theories and reflects the social structure of stakeholders. Results also reveal that stakeholders are able to recognize OSH hazards in construction processes yet they have different estimations of risk likelihood. This work contributes to the body of safety knowledge by providing explicit and convincing evidence as to discrepancies in stakeholder perceptions. In practice, decision makers could recognize stakeholder differences and appropriately adjust project management based on findings from this research.

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