

Occupant Behaviour Change in Post-Pandemic Australia

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Abstract : In post-pandemic Australia, it is unclear how building occupant have changed their behaviour in their interaction with buildings and other occupants. This research provides information on occupant behaviour change compared to before the pandemic and examines the predictors for those behaviour changes. This paper analyses survey responses from 2298 building occupants in Melbourne to investigate occupant behaviour change and determinants for those changes one year after the pandemic in Australia. The behaviour changes were grouped into three categories based on respiratory infection routes: (1) fomite: hand-shaking and hand hygiene behaviours; (2) airborne: individual interventions to indoor air quality such as face masking, window openings for occupants working in naturally ventilated space; (3) droplets: social distancing, reducing working hours in the workplace. The survey shows that the pandemic has significantly changed occupants' behaviour in all three categories compared to before the pandemic. The changes are significantly associated with occupants' perceived indoor air quality, indoor environmental cleanliness, and occupant density, demonstrating their growing awareness of respiratory infection risk that influences their health behaviours. The two most significant factors identified from multivariate regressions to drive the behaviour change include occupant risk perception of respiratory infections at the workplace and their observed co-worker's behaviour change. Based on the survey results, the paper provides adjusted estimates for related occupant behaviour parameters. The study also discusses alternatives for managing window operations in naturally ventilated buildings to improve occupant satisfaction. This paper could help Building Managers, and Building Designers understand occupant behaviour change to improve building operations and new building design to enhance occupant experience. Also, building energy modellers and risk assessors may use the findings to adjust occupant behaviour-related parameters to improve the models. The findings contribute to the knowledge of Human-Building Interaction.

Keywords : human-building interaction, risk perception, occupant behaviour, IAQ, COVID-19

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