

THERMAL COMFORT AND SELF-REPORTED PRODUCTIVITY IN OFFICE WITH CEILING FANS

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CASE STUDY

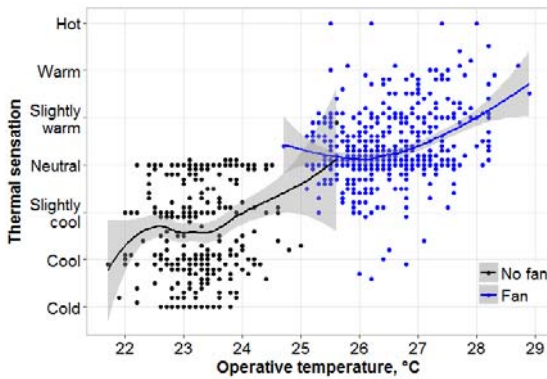
We assessed the impact of the use of ceiling fans and increased temperature set-points on thermal comfort and self-reported productivity in the real office in Singapore.

- 6 weeks of measurements
- We tested typical Singaporean temperature set-point (23 °C) and elevated room temperature (up to 27 °C)
- Air movement provided by ceiling fans was under occupants' control
- Survey was a result of interdisciplinary work of a psychometrician and building scientist

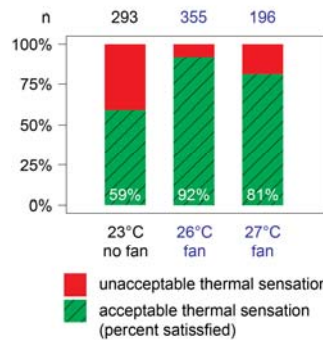


3D rendering of the BOSCH RTC office (Singapore) equipped with Haiku 60° ceiling fans

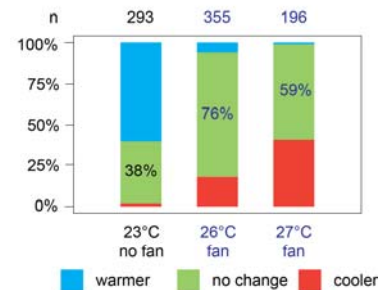
SURVEY RESULTS



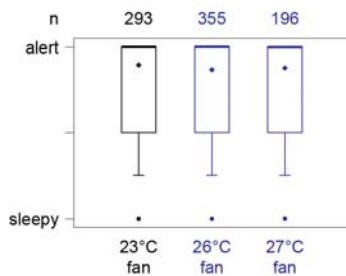
(A) THERMAL SENSATION ACCEPTABILITY



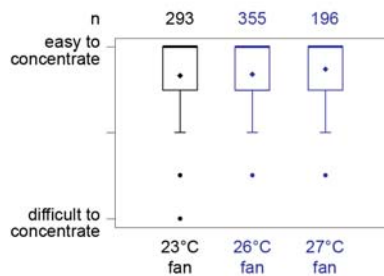
(B) THERMAL PREFERENCES



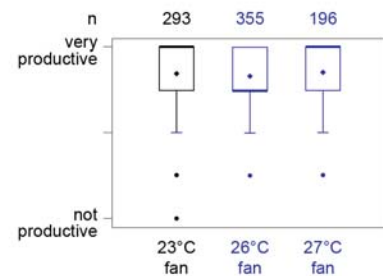
(A) SLEEPINESS LEVEL



(B) DIFFICULTY IN CONCENTRATION



(C) WORK PRODUCTIVITY



CONCLUSIONS

Increasing temperature set-point from 23°C to 26-27°C and simultaneously using ceiling fan increased thermal comfort and maintained high self-reported productivity

"This research project is funded by the National Research Foundation Singapore under its Campus for Research Excellence and Technological Enterprise (CREATE) programme."