DRIVING TRANSFORMATION

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Co-Convened by

Stanford | Environmental and Energy Policy Analysis Center

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Research question

Significant rise in energy use & demand for cooling
(IEA, 2019)

Potential of air-conditioning alternatives
(Khosla et al., 2022)

Can social norms nudge office occupants to use more personal adaptive cooling?

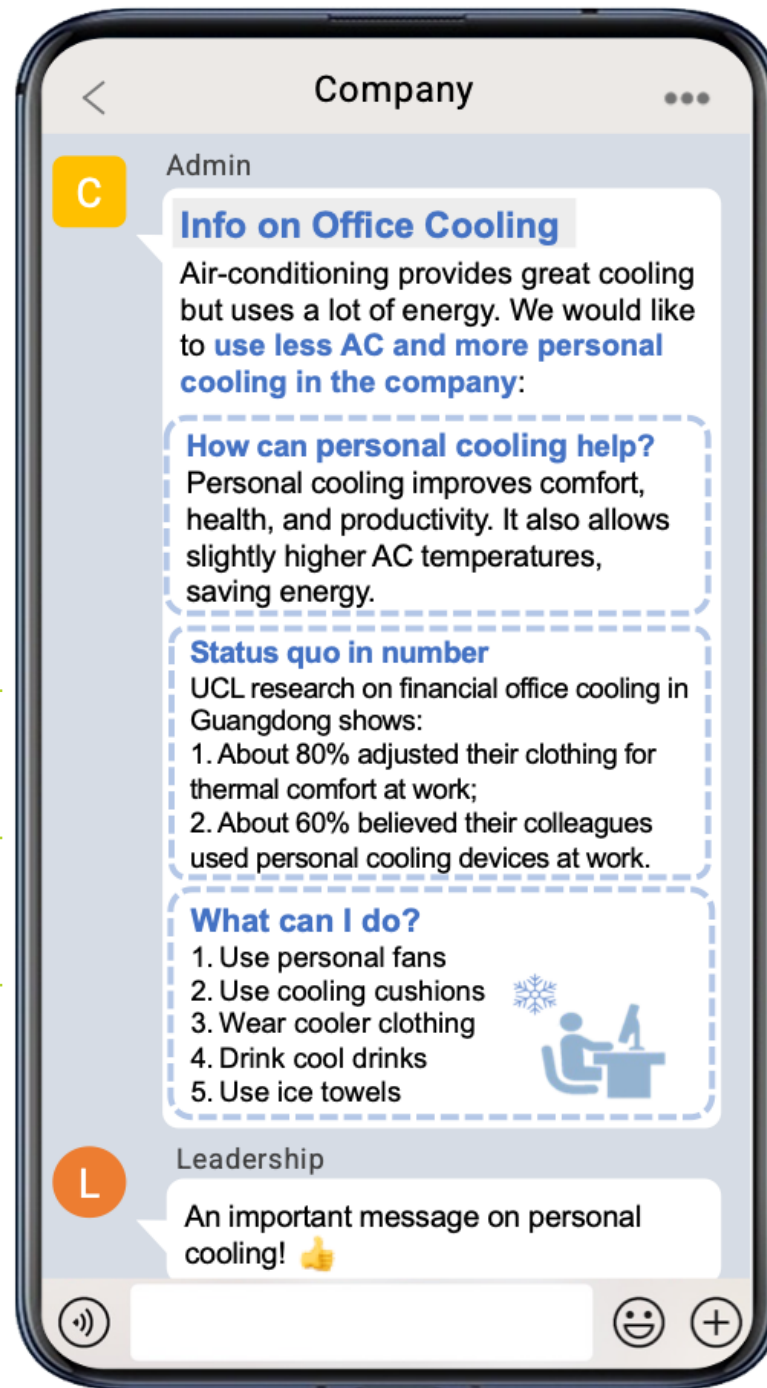Personal Cooling Devices (PCDs)

Lighter Clothing

Method

⚙ Online survey experiment

📍 Financial workers in Guangdong

✥ 2 by 2 factorial design

Descriptive norm (n=189)	Both norms (n=178)
Injunctive norm (n=185)	No norm (n=191)

💬 Treatment example →

🔍 4 outcomes: clothing & PCD change, commitment to lighter clothing & to more PCD use

Both Norms Group

Admin

C

Info on Office Cooling
Air-conditioning provides great cooling but uses a lot of energy. We would like to use less AC and more personal cooling in the company:

How can personal cooling help?
Personal cooling improves comfort, health, and productivity. It also allows slightly higher AC temperatures, saving energy.

Status quo in number
UCL research on financial office cooling in Guangdong shows:
1. About 80% adjusted their clothing for thermal comfort at work;
2. About 60% believed their colleagues used personal cooling devices at work.

What can I do?
1. Use personal fans
2. Use cooling cushions
3. Wear cooler clothing
4. Drink cool drinks
5. Use ice towels

Leadership
L
An important message on personal cooling! 👍

Educational info

Descriptive norm

Educational info

Injunctive norm

4

Descriptive results

Behavioral intention

Choices of clothing & PCD use frequency (pre-post)
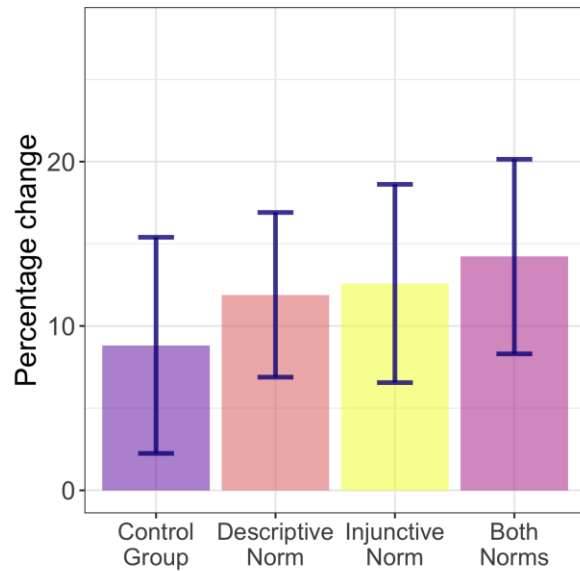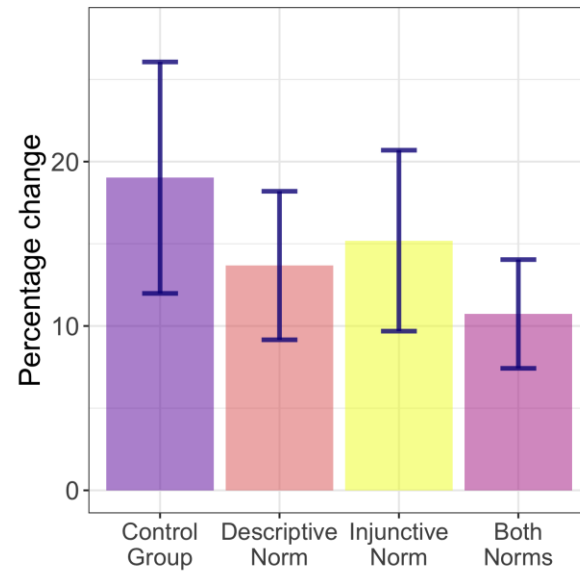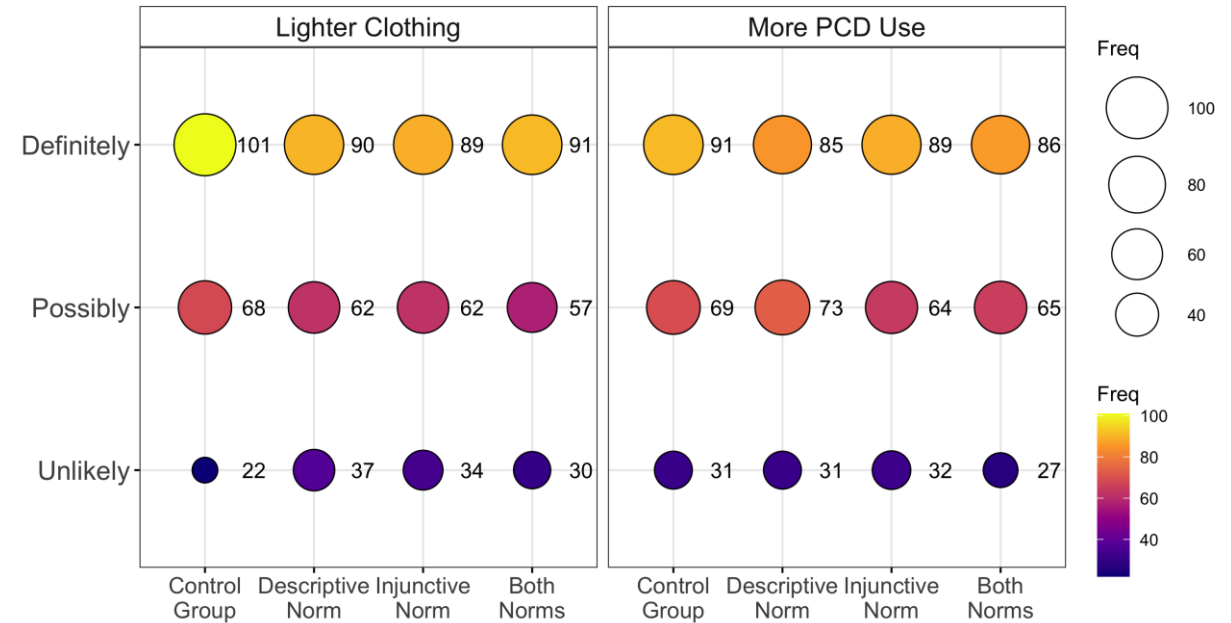
Commitment intention

How willing are you to commit to personal cooling? (post-treatment)

Modelling results - did the intervention work?

Behavioral intention – Difference-in-differences

	Descriptive norm	Injunctive norm	Both norms
Clothing warmth	✕	✕	**Cooler†**
PCD use frequency	✕	✕	✕

Commitment intention – Multinomial logit

	Descriptive norm	Injunctive norm	Descriptive × Injunctive
Commitment to lighter clothing	Weaker*	Weaker*	**Stronger***
Commitment to more PCD	✕	✕	✕

† p<0.1; * p<0.05   ⬤ Positive effect   ⬤ Null or negative effect
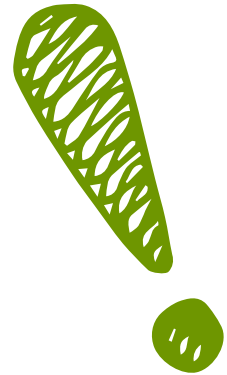
Overall results

- Control condition worked (education info & setpoint↑)

- **Both norms** together worked better:
  - → **lighter clothing** (DID)
  - → **stronger commitment to lighter clothing** (Mlogit)

- Only effective on clothing intention & commitment
  - → Question order effect?

- Other effects non-significant: Confounded by existing norms & ceiling effect

Implications & takeaways

1) Are education information + AC setpoint raise enough?

2) What about long-term effects of these norms?

3) Contextually implied social norms might work better

4) CAUTION: Confounders & limits of social norm interventions
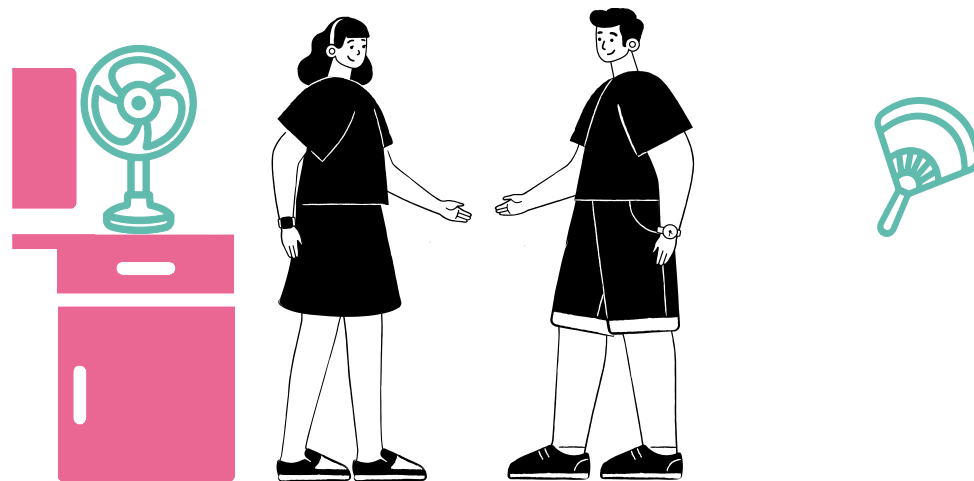
Thank you for listening!

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References