Smart-service innovation: how we can be great hosts and conserve resources at the same time

CEP Conference 26–27 May 2021 Christchurch, NZ



Prof Susanne Becken, Dr Alexandra Coghlan and Dr Christopher Warren Griffith University Funded by Australian Research Council DP200100972



#### Why accommodation?

Total guest nights, monthly 2015-19



The 'average visitor' in a hotel ...

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Consumes 242 MJ energy per night Emits 27 kg CO2-e per night Uses 660 litres of water per night



Data from EarthCheck, see www.tourismdashboard.org

#### Most research and practice focuses on technology and management

### Saving energy and water in tourist accommodation: A systematic literature review (1987–2015)

Christopher Warren 💿 | Susanne Becken

Griffith Institute for Tourism (GIFT), Griffith University, Queensland, Australia

#### Correspondence

Christopher Warren, Griffith Institute for Tourism (GIFT), Griffith University, Gold Coast Campus, Parklands Drive, QLD 4222, Australia. Email: christopher.warren2@griffithuni.edu.au



# There is a huge gap in engaging the guest



Except for the use of towels...



#### Singular approaches for WATER SAVINGS used in field experiments

**USING TECH + FEEDBACK** – smart showers (with/without display panel) **15% reduction** in shower time (51 seconds, or approx. 20l of water saved) (Pereira-Doel, et al., 2019).

#### NON-TECH BEHAVIOURAL TECHNIQUES (all focussed on linen/towel reuse)

- Default settings<sup>1</sup>: opt out (please don't change sheets) was nearly three times more effective than opt in (please change sheets) (32% vs 89% of requests).
- 2. Personal communication<sup>2</sup> twice as effective as in-room sign only
- 3. Guest commitments<sup>3</sup>, particularly visible commitment, e.g. pin, led to **25% increase** in towel reuse.
- Injunctive appeals<sup>4</sup> ("do it") 23% more effective than economic incentives (84% compliance vs 61% compliance)
- 5. Use of social norms<sup>5</sup> is **9% more effective** than environmental appeals (44% vs 35% towel reuse)







## Reporting on an integrated approach

- Uses smart meter technology
- Considers local context and infrastructure
- Identifies opportunities for saving for guests
- Persuasive communication targeted at the guest including:
  - eco-feedback on their consumption
  - specific tips that allow guests to understand the impact of their actions





### How does it work?

- Guests receive information before arrival and at check in
- Resource use if monitored and shared back in the morning
- Guests have options to make choices
- Resource savings are donated to a local charity.



### Information

- About the local climate and other factors (e.g. drought)
- What the business itself is doing!
- Some suggestions for how to conserve
- What services are available, e.g. bikes, extra blankets



#### **Eco-feedback**

- Daily feedback on resource use
- Alongside data on 'average'
- And weather + activity suggestions

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### Guest options

 Example thermal comfort



С., Becken, Warren, S., Nguyen, K. & Stewart, R. Impact (2018).of а sustainability smart service on daily resource use in self-contained B&B style tourist accommodation. Iournal of Cleaner Production, 201, 599-608.





#### **Donating savings**

- Example Crystal Creek Meadows, Australia (the case study used to test the approach), raised and donated AUS\$63,329
- New Zealand biodiversity protection and restoration
- Important incentive for guests to contribute or 'give back'



### Social-technological innovation

- Technology alone won't solve it
- If we don't include human behaviour we risk green washing
- It misses a huge opportunity to 'reconnect people'





#### Experience-led resource conservation

- In our previous research, guests responded that the eco-feedback "strongly added" (24.5%), "tended to add" (49.1%) or was "neutral" (26.4%) to their experience.
- …learning new things, getting closer to nature, 'doing things' with the kids, leaving a positive impact, or simply being competitive...



## Questions

