

# Well-intended but half-hearted

Hosts' consideration of guests' privacy in smart rentals

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# The increased usage of smart home devices in short-term rentals raises privacy concerns for guests



<https://i.ytimg.com/vi/-kH8tXyNklo/maxresdefault.jpg>

# Majority of previous work focus on guests' wants/needs

<b>Dey et al. (2020)</b>	<b>Mare et al. (2020)</b>	<b>Wang et al. (2023)</b>
Airbnb hosts use SHDs for security, monitoring guests' activity, remote control, convenience/entertainment, energy conservation.	Voice assistants in living rooms and bedrooms were concerning for guests.	Airbnb tenants are most likely to negotiate their privacy if security cameras, motion sensors, and voice assistants are present.
Airbnb hosts were concerned about technical problems and privacy concerns...(their information being infringed by guests).	Guests were concerned about hosts' access to data and control of devices <-> Hosts were concerned about guests stealing/damaging SHDs.	Airbnb tenants wanted to negotiate their privacy through asynchronous channels during their booking process.

We still do not know how hosts use smart home devices, for example, how they manage accounts and data, and disclose their devices to guests.

# Research Questions

1. How do short-term rental hosts **use** smart home devices in rental properties?
2. How do short-term rental hosts **manage** smart home devices in rental properties?
3. How do short-term rental hosts **disclose** smart home devices in rental properties?

# We conducted online interviews with 15 STR hosts



Research Questions	Interview protocol	Thematic analysis
RQ1: how do STR hosts <b>use</b> SHDs?	Motivations (e.g., types, location of SHDs)	E.g., types and locations of SHDs
RQ2: how do STR hosts <b>manage</b> SHDs?	Management practices (e.g., accounts, data)	E.g., access/control
RQ3: how do STR hosts <b>disclose</b> SHDs?	Disclosure practices (e.g., perceptions on guideline)	E.g., must/unsure of disclosing

## Hosts use a variety of devices in a variety of places

Types of devices	Location (access)			Total
	Guest only	Guest and host	Public	
Smart speakers	8	2	0	10
Smart thermostats	5	5	0	10
Smart cameras	1	2	6	9
Smart door locks	0	0	9	9
Streaming devices	5	4	0	9

“Sometimes people will show up and bring 10 more guests than they said they were going to bring” (P4)

“Smart cameras are the most invasive devices we have...So that’s why it faces the front door” (P1)

“I wouldn’t use one of those [smart speakers] in my unit because of audio recording” (P8)

# Hosts use their accounts and provide guest mode, but also monitor guests if necessary

## Account usage



Host Property  
managers

## Control of devices



Guest mode

## Monitoring data

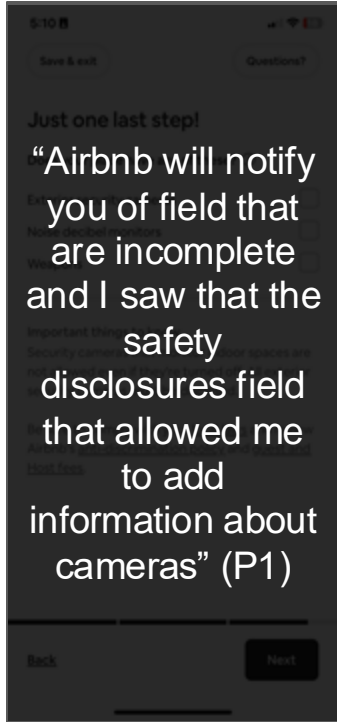


“they [the guests] opened the door at some point and then for like four or five hours it wasn’t closed” (P10)

“I didn’t have a very good vibe about this guy. I saw him through the camera and he was kind of pushing it [the espresso machine], and I was like, you’re going to break it” (P11)



# Hosts' opinions about guidelines/policies re: smart devices



"helps create a norm for hosts to disclose any kind of surveillance devices" (P1)



"it's a protection for both hosts and guests" (P4)

generic (P14), confusing (P9)

## Wants/Needs:

"they [Airbnb] could probably do a little bit better job with helping hosts to implement that and to actually put it in front of guests' face a little bit better" (P4)



**Must** disclose indoor smart cameras



**Unsure** about other devices

Disclose in **listing descriptions** and through multiple channels





# Hosts' experiences/anticipations of conflicts with guests



P11 was **called out as a predator** after monitoring her guests due to noise complaints.

A guest was **paranoid** after P11 called them out (with an image) for trash disposal.

**Most** of our participants could anticipate conflicts with guests about SHD usage.

**Hosts' willingness to negotiate:** duration of stay, reasons for guests' concerns, acknowledgement of consequences.

“if it's a longer stay, I would definitely say we will, we can turn the cameras off at the door and just keep the cameras on at the driveway so we can just monitor who's coming and who's going.” (P12)

**Hosts were willing to negotiate a range of devices**



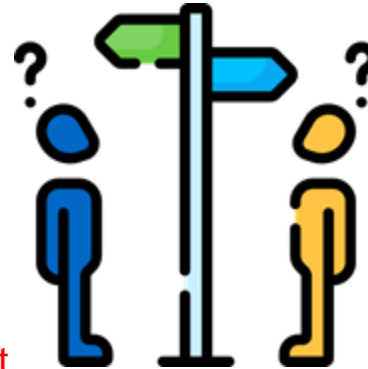
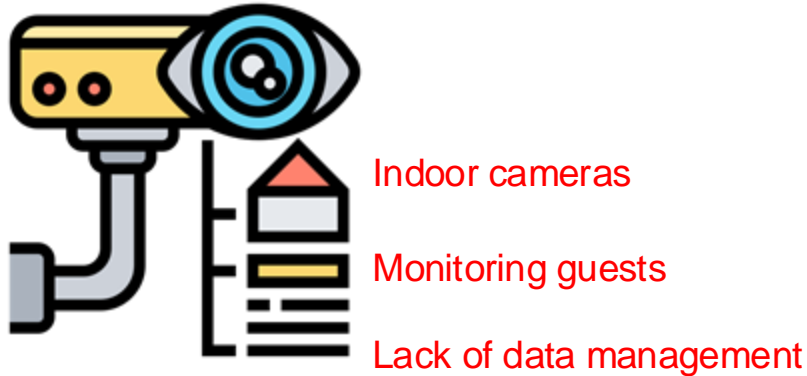
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# Lack of guidance on navigating hosts' conflicting needs

- **Hosts' conflicting needs:** Protecting their property vs. protecting guests' privacy.
- Ex/esp: Using cameras to monitor the property inevitably monitors guests.

Concerning usage of smart cameras



Choice of device and location, logging out of guests' accounts, limiting control during guests' visit, disclosing cameras, account sharing with property managers

# Improving guidelines, design recommendations, open Qs



## Develop guidelines for managing smart home device data in short-term rentals

- ✓ Reasonable measures should be taken to limit access to surveillance data.
  - + Account sharing guidelines (e.g., when sharing with property managers).
- ✓ Surveillance data should be deleted when no longer needed.
  - + Deleting data after guest complaint period ends.



## Design recommendations for short-term rental platforms



Periodic checking for updates on smart devices



Design features to find information



Disclosure throughout booking process



## Remaining questions for devices other than cameras

- Guests find smart speakers as privacy-invasive, but hosts' opinions diverge.
- Multi-functioning devices such as smart displays and smart TVs are in a grey area.

# Thank you! Questions?

Contact: [sypark@umd.edu](mailto:sypark@umd.edu)



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