

Do Privacy and Security Matter to Everyone?

Quantifying and Clustering User-Centric Considerations About Smart Home Device Adoption



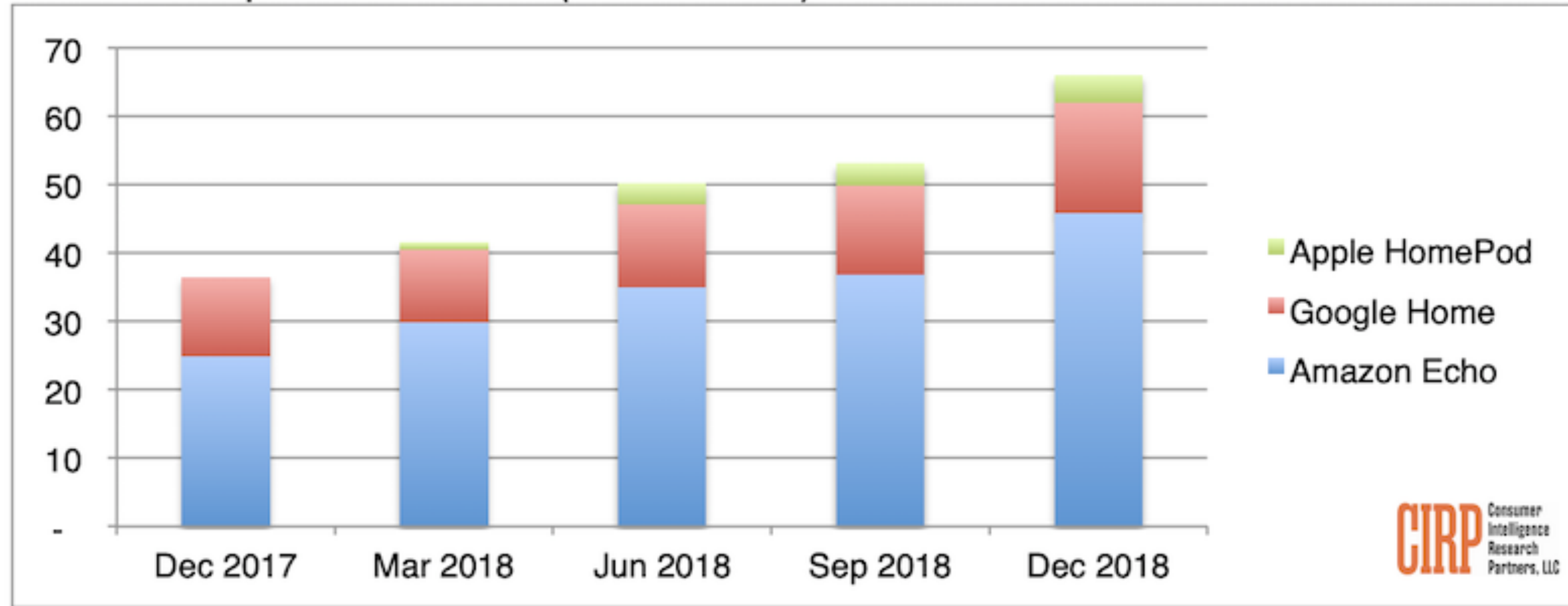
Natã M. Barbosa, Zhuohao Zhang, Yang Wang



The Smart Home Adoption-Concern Conundrum

The Washington Post

Chart 1: Smart speaker installed base (millions of units)



CIRP
Consumer
Intelligence
Research
Partners, LLC

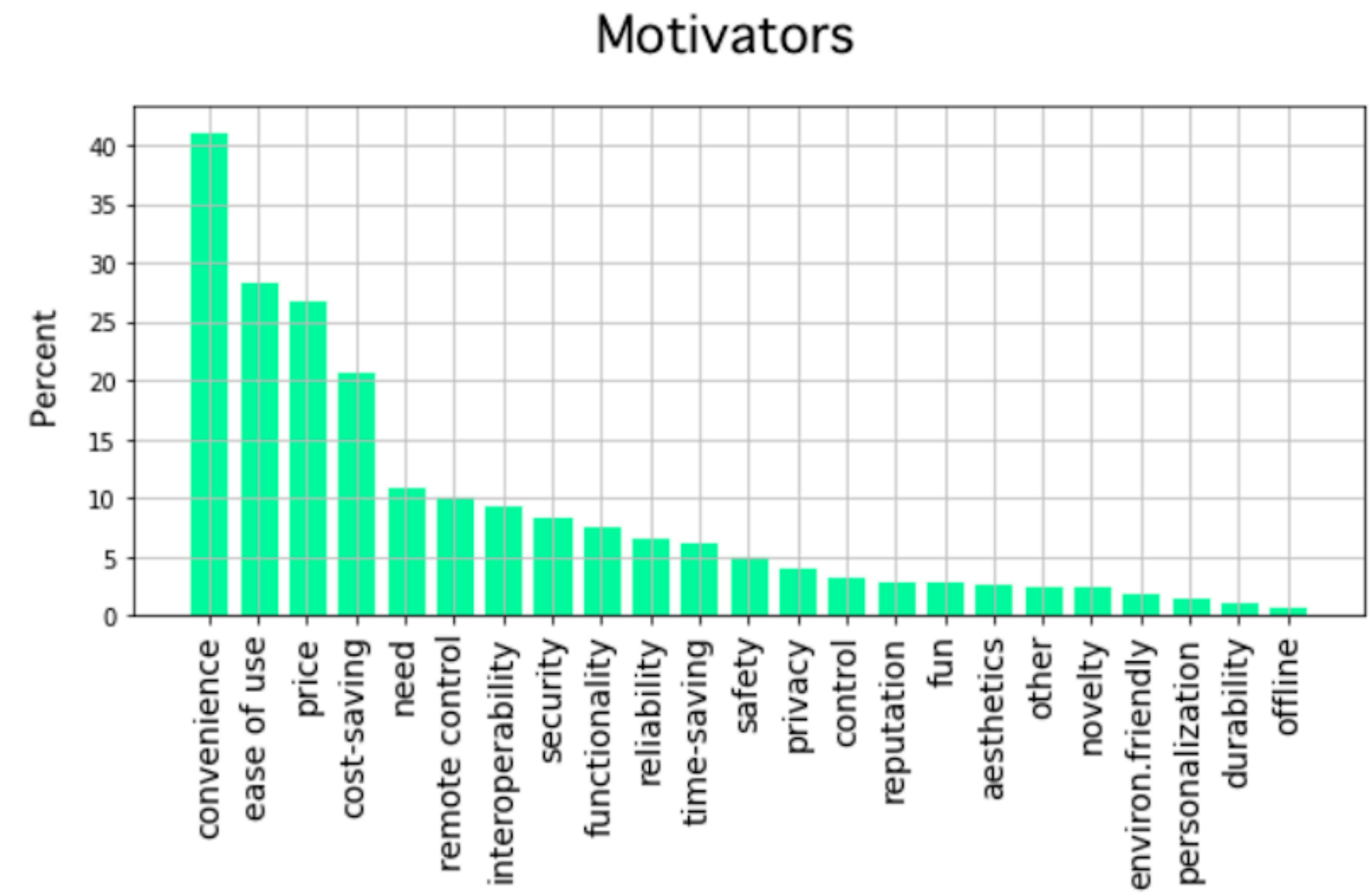
In the Smart Home Buyers Should Beware

Are we unwittingly letting privacy and security Trojan Horses into our homes, disguised as smart home tech?

- What are factors that could **motivate you** to purchase smart home products?
- What are factors that could **keep you from** adopting the technology?

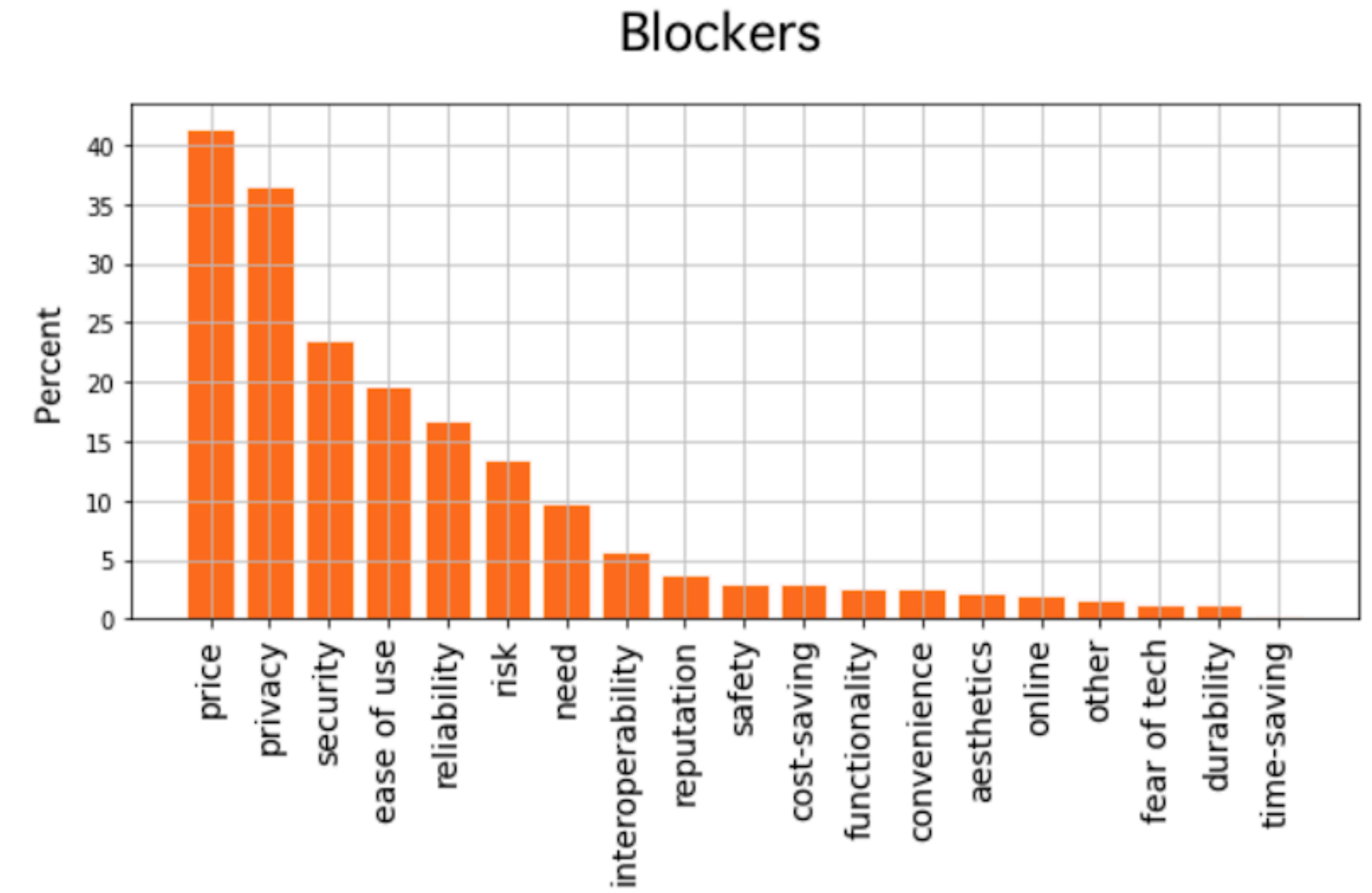
Top motivators

Convenience, ease of use, price, cost-saving, and need.



Top blockers

Price, privacy, security, ease of use, and reliability.

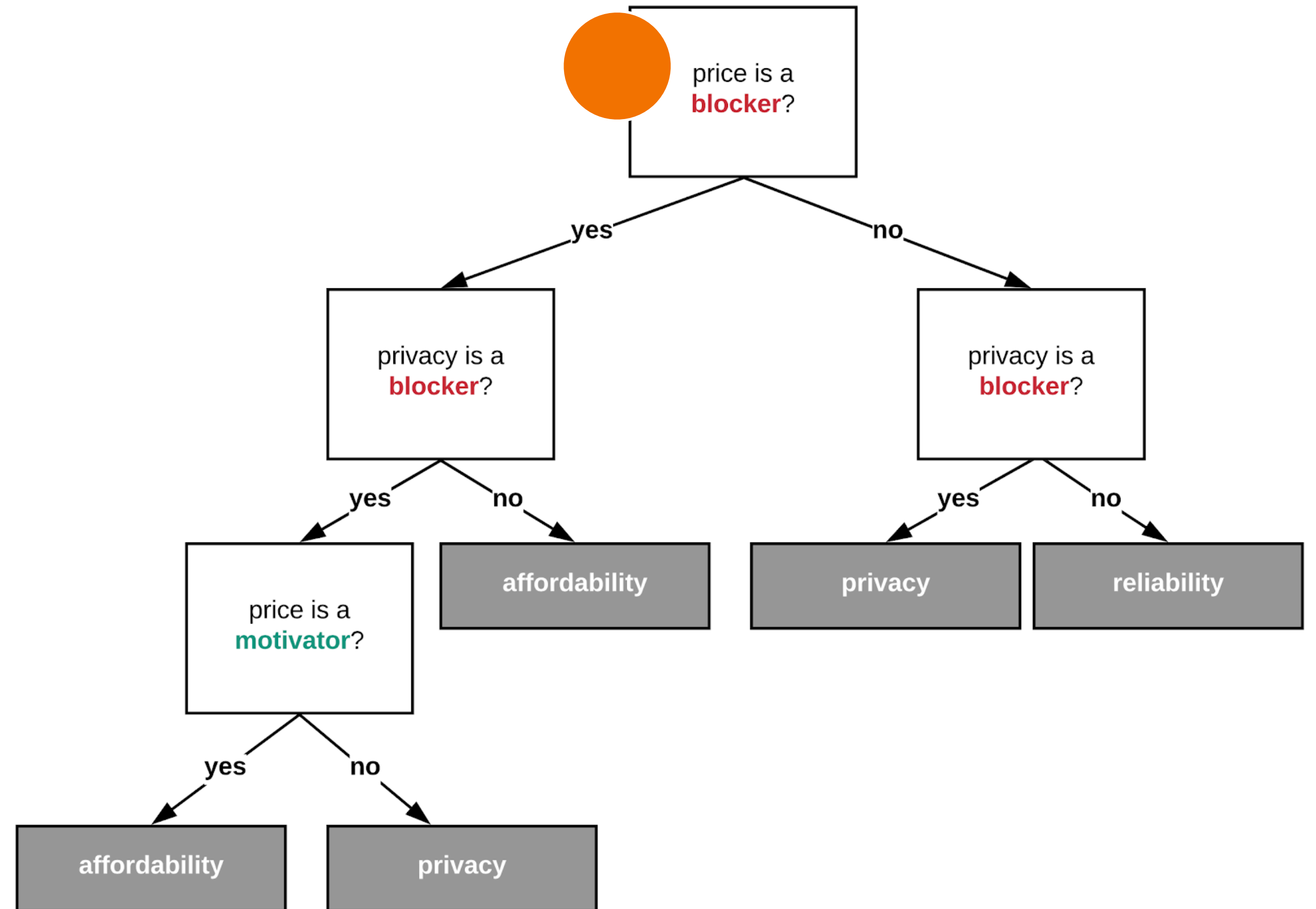


Clustering

- Three clusters:
 - **Affordability:** too expensive
 - **Privacy:** afraid of monitoring or secondary use
 - **Reliability:** what happens when the Internet goes down?
- Clusters largely defined by blockers

Takeaway

If **price** becomes a **motivator**, even privacy-concerned consumers may choose to adopt a device.



Recommendations

For Developers

- **Highlight priorities** (i.e., price, privacy, reliability) to help consumers find the right device for them
- **Surface tradeoffs**, for example, cameras with an offline mode:
 - Object detection may not work when offline (reliability)
 - More expensive with built-in object-recognition capabilities (price)

Recommendations

For Policymakers

- **Mitigate** bounded rationality
 - Is it cheaper or free but privacy-invasive?
 - Is it more expensive but also more reliable?
- **Educate** when smart alternative cheaper or free

Thank you!

- Paper download
 - <http://bit.do/user-considerations-smart-home>
- We thank our participants, the anonymous reviewers, and the NSF
- Get in touch
 - natamb2@illinois.edu
 - <https://natabarbosa.com>