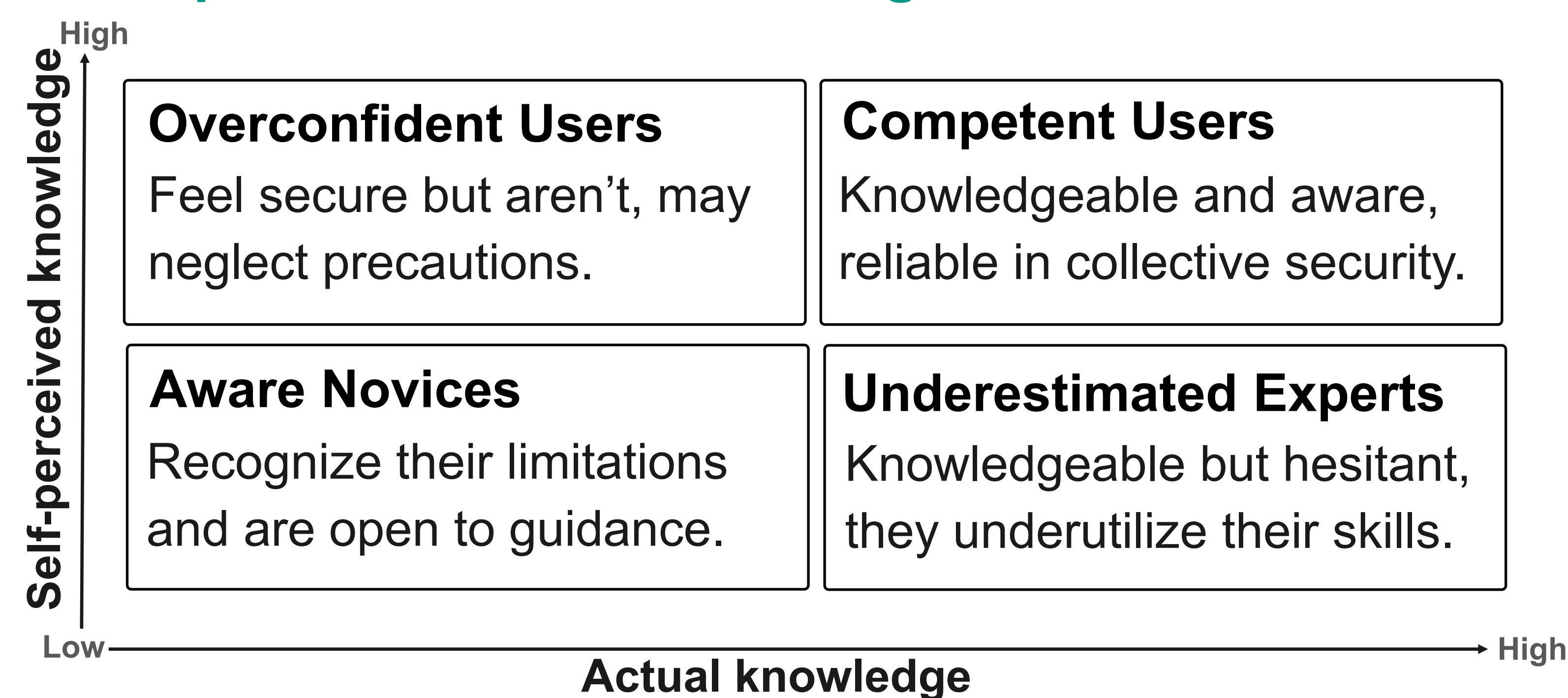


Data Privacy and Cybersecurity Misperceptions: From Individual Decision-Making to Collective Digital Security

Research background

Cybersecurity behaves like a public good: each person's security decisions create positive externalities for others, while insecure behavior generates negative externalities and increases collective risk. A related challenge exists in data privacy, where users often misjudge how much personal data they share and who can access it, reflecting a broader gap between **objective knowledge** and **self-perceived** competence. Recent research suggests that many security failures stem from this mismatch between what people actually know and what they believe they know. This thesis investigates how this **knowledge-perception** gap shapes protective behavior in the context of **collective digital security**.

Conceptual framework: User segmentation matrix



Methods and data

Literature review

Cybersecurity, data privacy economics, public goods & externalities, behavioral economics, & technology literacy.

Online survey

Measuring objective data privacy & security knowledge, usage, self-assessed competence, and security-related behavior.

Randomized experiment

Testing the effects of different information interventions on privacy & security decisions & risk-taking behavior.

Data sources

Flash Eurobarometer 547 (Cyber Skills), Special Eurobarometer 499, ENISA reports, & OECD indicators, complemented by original experimental data.

What you'll do

- Conduct literature research on cybersecurity, data privacy & digital public goods.
- Run an online survey & a randomized controlled experiment
- Analyze experimental data in R or Python

What we offer

- Ongoing supervision by the Chair of Economic Policy
- Access to survey & experimental data
- Guidance, regular feedback, & open discussion with team members

Requirements

- Interest in behavioral economics, cybersecurity, public goods, or experimental designs
- Experience with R or Python, familiarity with SoSci Survey is an advantage
- Good English communication skills

Related work Starting literature

[1] Kruger, J., & Dunning, D. (1999). Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments. *Journal of Personality and Social Psychology*, 77(6), 1121–1134.

[2] Varian, H. R. (2004). *System Reliability and Free Riding*. In L. J. Camp & S. Lewis (Eds.), *Economics of Information Security* (pp. 1–15). Springer

[3] Buchholz, W. & Sandler, T. (2021). Global public goods: A survey. *Journal of Economic Literature*, 59(2), 488–545.

[4] Arias-Cabarcos, P., Khalili, S., & Strufe, T. (2023). "Surprised, Shocked, Worried": User Reactions to Facebook Data Collection from Third Parties. *Proceedings on Privacy-Enhancing Technologies*, 2023(1), 384–399.

[5] Das Chowdhury, P., Renaud, K. & Ott, I. (2026). Would 'secure' users lead to secure commons? Surprisingly not! *Proc. New. Security Paradigms Workshop (NSPW '25)*, 17–36. ACM.

[6] Zimmermann, V., & Renaud, K. (2021). *The Nudge Puzzle: Matching Nudge Interventions to Cybersecurity Decisions*. *ACM Transactions on Computer-Human Interaction*, 28(1), Article 7.

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