

Digital Security — A Question of Perspective. A Large-Scale Telephone Survey with Four At-Risk User Groups

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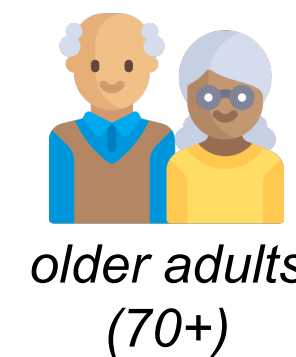
Motivation

- Inclusive security research needs to go beyond the “average user” and **center at-risk user groups** ^[1] — those who are more likely to be attacked and/or suffering disproportionate harm.
- **Large-scale quantitative** studies comparing different at-risk users are rare and challenging to conduct.

Research Questions

Focusing on four at-risk user groups in Germany, we ask:

- (1) What are their experiences related to digital security?
- (2) How similar or different are their security experiences?



older adults
(70+)



teenagers
(14-17)



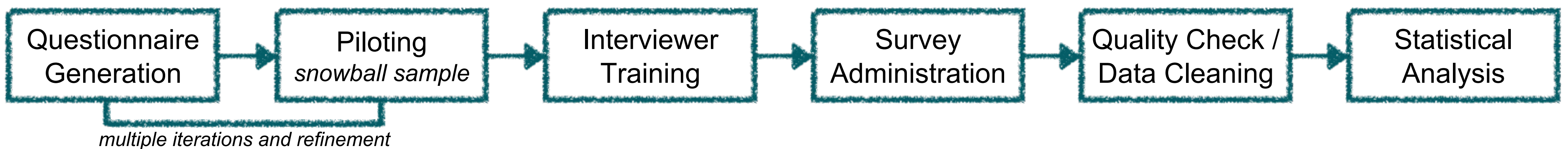
migrants
(EU definition) ^[2]



less educated
($<$ high school)

Methodology

- Computer-assisted telephone interviews (CATI) with 1,003 participants in Germany (~250 per group)
- Advantages of CATI: allows follow-up questions, does not assume computer literacy, results in high-quality data



Key Findings (Cross-Group Similarities)

- Shared patterns in **concerns** related to digital security
 - Most prominent: hacking, financial loss
 - Less concerns over tracking and surveillance
- Shared perceptions of **possible attackers** (Fig.1)
 - Most likely attackers: hackers and criminals
 - Least likely attackers: people in close social circles (e.g., family members, friends, and work colleagues)

Group	Possible Attackers							
	Family members	Friends	Work colleagues	Officials from Germany	Officials from other countries	Private sector companies	Criminals	Hackers
Older Adults	1.27	1.31	1.33	1.48	2.68	2.71	3.40	3.13
Teenagers	1.49	1.74	1.54	2.76	2.75	3.00	3.87	3.74
Migra. Backgr.	1.28	1.40	1.67	2.95	3.26	3.22	3.96	3.63
Low Education	1.33	1.47	1.67	2.98	3.26	3.30	4.00	3.60

Fig.1 Perceived probability of being attacked by eight groups, in mean values (from 1 = “not likely” to 5 = “very likely”)

Key Findings (Cross-Group Differences)

- **Sources** for obtaining digital security information
 - Migrants: seek info more actively than other groups
 - Teenagers: rely more on social media, less on print media and experts/authorities
- Exposure to **cybercrime**
 - Migrants experience more cybercrimes than other groups
 - The average rate across groups (55%) is much higher compared to the general population in Germany (29%) ^[3]

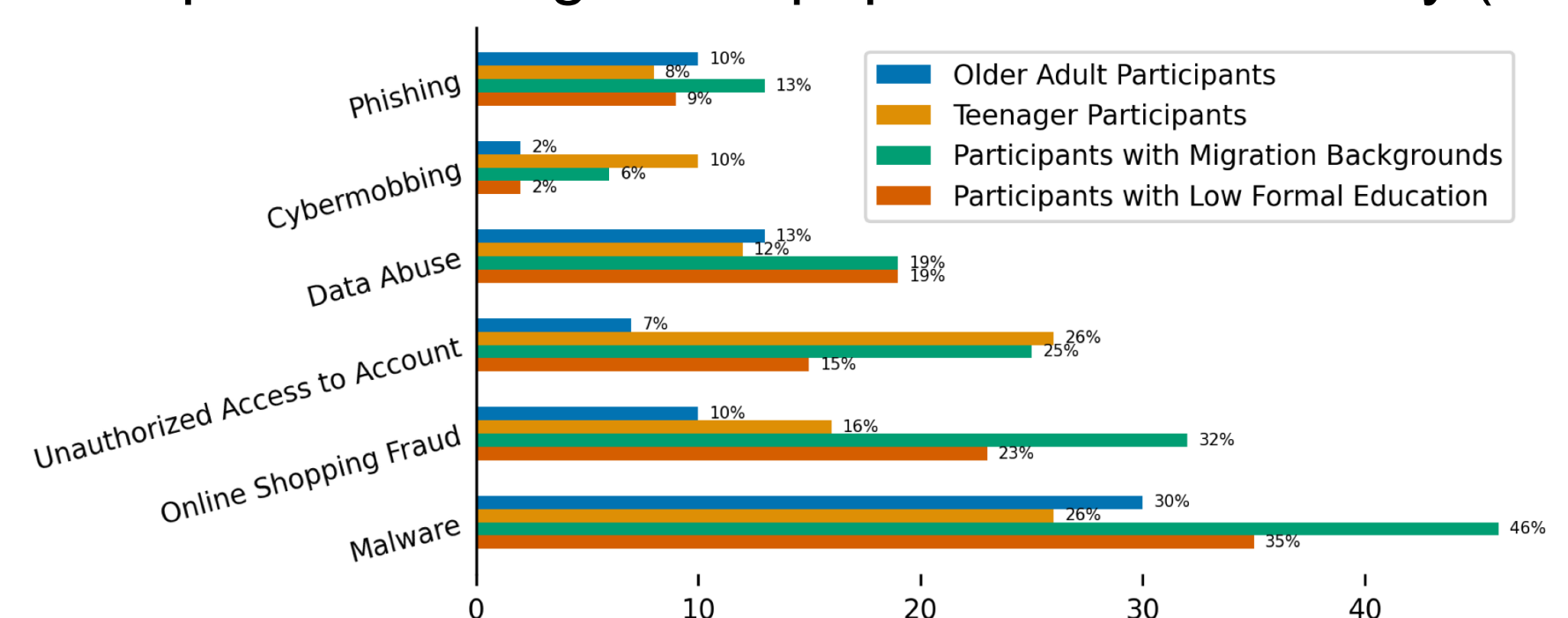


Fig.2 Participants from each group who were affected by different cybercrimes

Discussion & Future Work

- Takeaways from between-group comparisons
 - All groups trust and rely on friends and family — opportunities for security education; possible threats from intimate surveillance
 - Differences between groups can stem from one’s device usage and life stage
- CATI as a research method: more effectively reach at-risk user groups
- How do these at-risk user groups compare to the “general population”?

References

[1] Warford et al. “SoK: A framework for unifying at-risk user research.” IEEE S&P (2022).

[2] https://home-affairs.ec.europa.eu/pages/glossary/person-migratory-background_en

[3] Zindler & Bolz. “Digitalbarometer 2022: Bürgerbefragung zur Cyber-Sicherheit.” [German]

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QR code for the paper

