

# Digital Security – A Question of Perspective

## A Large-Scale Telephone Survey with Four At-Risk User Groups

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# Challenging the Notion of a “General User”



- At-risk groups are individuals or communities with *“risk factors that augment or amplify their chances of being digitally attacked [...]”* (Warford et al.)
- They face disproportionate challenges in protecting their security and privacy due to disparities in digital literacy, resources, time, and linguistic or cultural barriers (Sannon & Forte; Warford et al.)

# Designing for At-Risk Users Benefits Everyone



 **Gebärdensprache**  
Sign language

 **Leichte Sprache**  
Plain language

Deutsch ^

English

Türkçe

Русский

Français

العربية



# Our Study

## Security Experiences from Four Groups



older adults  
(70+)



Teenagers  
(14-17)



With migration  
backgrounds  
(EU definition)



with low  
education  
( $<$ high school)

- Each group known to be “at risk” for various (different reasons)
- Each group broad enough to draw a nationally representative sample in Germany
- Questions: device usage; concerns; prior incidents; possible attackers; information sources

# Survey Method

## Computer-Assisted Telephone Interviews (CATI)



- Telephone surveying technique
- Interviewer follows a script provided by a software application



### CATI vs. (online) surveys:

- Easier to reach groups with less digital access
- Allow clarifying questions
- Higher data quality












### CATI vs. in-person interviews:

- Less costly
- More efficient

# Results

## Usage of Internet-Connected Devices

				
	74%	99%	97%	91%
	78%	83%	88%	85%
	35%	55%	57%	48%
	9%	21%	29%	18%
	11%	26%	38%	25%
# of device types	2.3	3.0	3.4	3.0

# Results

## Usage of Internet-Connected Devices



74%

99%

97%

91%



78%

83%

88%

85%

Most used



35%

55%

57%

48%



9%

21%

29%

18%



11%

26%

38%

25%

Least used

# of device types

2.3

3.0

3.4

3.0

# Results

## Similarities: Trust in Friends & Family

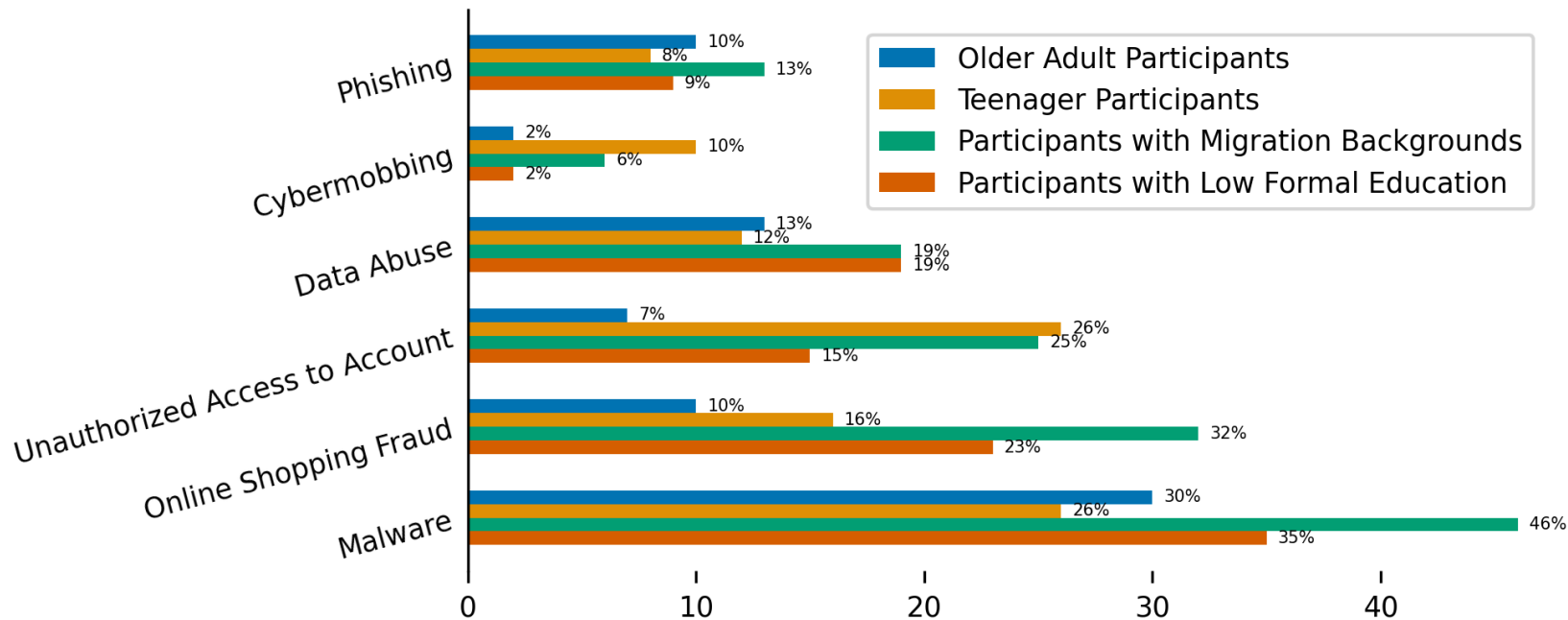
Group	Possible Attackers							
	Family members	Friends	Work colleagues	Officials from Germany	Officials from other countries	Private sector companies	Criminals	Hackers
Older Adults	1.27	1.31	1.33	1.48	2.68	2.71	3.40	3.13
Teenagers	1.49	1.74	1.54	2.76	2.75	3.00	3.87	3.74
Migra. Backgr.	1.28	1.40	1.67	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

- Most likely attackers: hackers and criminals
- Least likely attackers: people in close social circles (e.g., family members, friends, and work colleagues)



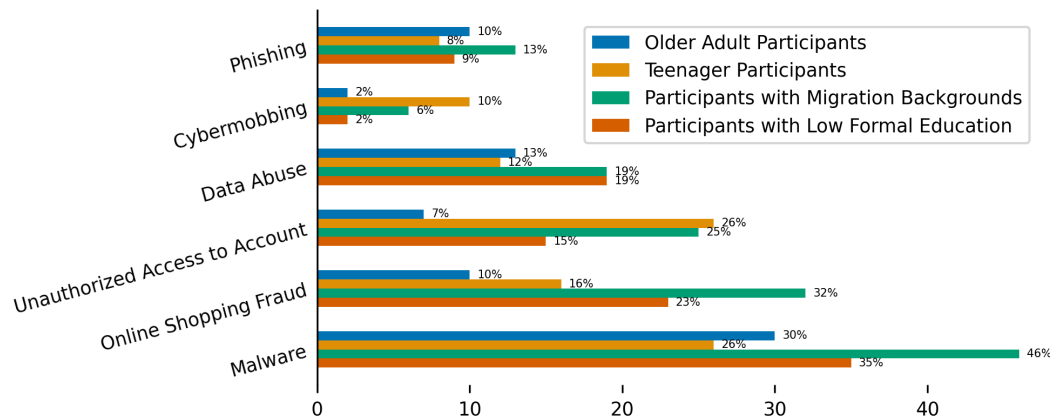
# Results

## Differences: Cybercrime Experience



# Results

## Higher Risk of Experiencing Cybercrime



55%

on average, across four groups, in our sample (study conducted in 2021)

29%

in a 2020 Germany-wide online survey\*

\*Digitalbarometer 2020: Bürgerbefragung zur Cybersicherheit [German]  
Zindler and Bolz. Technical Report. 2020.

## 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 different at-risk user groups compare to the “general population”?



CYBER SECURITY IN THE AGE  
OF LARGE-SCALE ADVERSARIES

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