Supplemental Material: Different Researchers, Different Results? Analyzing the Influence of Researcher Experience and Data Type During Qualitative Analysis of an Interview and Survey Study on Security Advice

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CCS Concepts: • **General and reference → Reliability**; **Empirical studies**; • **Security and privacy → Human and societal aspects of security and privacy**.

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1 OUTLINE

The supplementary material contains information related to the data collection procedures and analyses presented in this paper. First we include data collection instruments for the meta-analysis. The interview guideline which the course participants used to gain insight into the interviewee's reasons for trusting security advice, and their perceptions of realism and effectiveness of security advice is in Section 2.1. The data collection instrument for the survey data were questions from prior work, and we refer interested parties to Busse et al. for the full questionnaire [1]. We also include the instructions given to the course participants and researcher groups coding this interview data in Section 2.2 and the instructions for coding the survey data in Section 2.3. Note that these instructions were translated to English from the original language by the authors.

Second, we provide an overview of our coding for the meta-level analysis of the coding process. We show the codebooks used to compare the content of interview outcomes (Section 3.1) and survey outcomes (Section 3.2).

We also provide both the survey questions for the survey of Symposium on Usable Privacy and Security (SOUPS) Technical Papers Committee (PC) members, which is in Section 4.1, as well as the codebook resulting from the analysis of this data(Section 4.2).

2 DATA COLLECTION INSTRUMENTS

2.1 Interview Guideline

Preparation

The day before the interview

- □ Conduct a test recording using Zoom and find out where the generated files from this recording are saved
- □ Make sure that there are about 200 - 300 MB of disk space available for the Zoom recordings (numbers determined from a pre-test interview)
- □ Conduct a test recording with a backup recording device (probably your smartphone with a recording application) and try out where to position it, so that both the interviewer and the interviewee are clearly intelligible.

Directly before the interview

- □ Prepare a computer with a webcam in a quiet room
- □ Have paper and pen ready for taking notes
- □ Have this interview guideline available (either on a separate device / second screen or as a print-out)
- □ Keep the backup recording device ready, and make sure the battery charge status is sufficient
- □ open the video conferencing system (Zoom) and send your participant the invitation link to the Zoom room
- □ Link to the Informed Consent: [Link]
- □ Note down the time when interaction with your participant starts

Greeting

Hello, my name is (name) and I will lead you through this interview today.

[Depending on situation, some small talk may be appropriate to gain rapport with the participant / relax the situation.]

Before we start, I have some information for you, which you should read thoroughly. I have already sent them to you before this meeting, but I will send you a link to a survey, which contains the same information about the goals and the procedure of this study. At the end of the survey, we ask you for your consent to participate in the the interview and that we can record this conversation. Unfortunately, Zoom does not allow only recording audio, but we will only use the audio file of this conversation for analysis and will delete the additional video file directly after our meeting is over. We additionally ask for your name in the consent survey, since we otherwise cannot establish that you have consented to participate in this interview. We will not connect this information with the interview itself and will save it separately from the interview data.

You can find more detailed information at this link: [Link]

☐ **Send informed consent link to participant in Zoom-Chat: [Link]**

Before participant begins to read:

You can either give consent by filling out the survey, by signing the PDF you have previously received digitally, or by printing the PDF, signing it physically and scanning it. Which do you prefer?

If survey

Please send me a screenshot in the chat of your consent (name does not need to be visible)

If PDF

Please send me the signed PDF in the chat.

If you have any questions about the consent form, your can ask them at any time.

Wait until you get confirmation of consent.

At this point, do you have any more questions?

If that is okay for you, I will start the recording now.

Wait for interviewee affirmation / consent.

☐ Save screenshot / PDF
☐ Start recording in Zoom
☐ Start recording on the backup recording device and position it, so that the sound input is good for interviewer and interviewee
☐ Write down the time for the beginning of the actual interview

Interview

□ Note down technical terms which interviewees use during the interview

□ If not enough is said on a topic during the interview, you can try to dig deeper by asking additional questions: Could you please expand on this a bit? / Can you explain this in more detail? / How exactly ...? / Why exactly is this ...?

At the beginning, I have some general questions about you. I want to point out again that you can decline to answer any question, if you feel uncomfortable about answering.

- How old are you?
- As which gender do you identify?
- What is the highest level of education you have attained?
- What is your main occupation? *Job/university*
  - *If student*
    - What subjects do you study?
  - *If job:*
    - In which field of business do you work?
    - What is your job title?
  - *If an IT-related area was named for studied subjects or job:*
    - How many years of experience do you have in the area of IT?
    - How many years of experience do you have in the area of IT security?
- How do you judge your knowledge about IT security?
  - *Let the participants answer in words first.*
  - On a scale from 1 (very low) to 7 (very high), how do you judge your knowledge?
  - Why? / Could you explain this a bit more?
- How much technical affinity do you think you have?
  - *Let the participants answer in words first.*
  - On a scale from 1 (no technical affinity at al) bis 7 (very high technical affinity), where would you position yourself?
  - Why? / Could you explain this a bit more?

This interview is about IT security advice.

- What are the top three best pieces of advice which you would give to a non-tech-savvy user, to protect their IT security?

□ Note down the advice in bullet points to have them available for the rest of the interview.

Note for interviewers: If the participant does not refer back to each of the pieces of advice in the following questions, explicitly inquire about the respective advice.

- Why did you choose these three pieces of advice?

- – In how far do you follow this advice in your private life?
  - ∗ Why? / Why not?
- – In how far do you follow this advice in your work life / your university life?
  - ∗ Is this different than for your private behavior?
  - ∗ Why? / Why not?
- – How did you hear of these pieces of advice?
- – Why do you trust these pieces of advice?

Let's look at each of your advice in turn.
Note for interviewer: The following questions will be repeated for each of the pieces of advice.
ideas for phrasing: You named advice [x] before. / You had [y] on your list of top 3 advice. / You had also mentioned [Z] as an important piece of advice before.

- How likely do you think it is that a non-tech-savvy user (e.g. an older person) would actually use [advice]?
  - – Why?
- How useful do you think [advice] is to protect the IT security of the users from threats?
  - – Why? / What make the advice useful for this purpose in your eyes?

We are also interested in your opinion on two specific examples of IT security advice.

□ In this part of the interview, we want to ask about advice which the participant has not named before, i.e. which weren't in their top three.

□ If one of the pieces of advice has already been named by the particpant, you can try to dig deeper with some additional questions, or any questions which you have already asked, can be skipped, depending on how detailed the participants answers were before.
Questions which were not explicitly asked before:
- What do you think about [advice]?
- How does [advice] improve your IT security?

□ We have alternatives for the first piece of advice: If the first advice (2FA) has already been named, use the next one (use a unique password everywhere), if this advice has also already been named, then use "Be suspicious about links".

Let's talk about the advice [to use two-factor authentication /
to use a unique password everywhere /
to be suspicious about links] first.
Note for interviewers: This advice is highly effective, but not realistic, and is popular with experts.

- Have you heard of this advice before?
  - – If no, explanation:
  - – **Two-factor authentication** is the proof of identity of user trough a combination of two different and independent components. An example is using a password and a transaction number in online banking.

  - **Using a unique password everywhere** means that you do not re-use passwords, but have a different password for every application.
  - **Being suspicious about links** means that you are careful when interacting with link , e.g. online or in e-mails, and that you do not just click on them, but investigate them more closely, e.g. by hovering over them, where applicable.
- What do you think about this advice?
- How often do you yourself [use two-factor authentication /
  use different passwords /
  are you yourself suspicious about links.]
  - Why?
- How realistic do you think it is, that a non-tech-savvy user would actually apply this advice?
  - Why?
- How does [two-factor authentication /
  the use of different passwords /
  suspicion about links] improve your IT security?
- How useful do you think this advice is for improving IT security?
  - Why? What makes the advice (not) effective/useful in your eyes?

Let's talk about antivirus software now.
Note for interviewers: This advice has lower effectiveness, but is more realistic, and is not very popular with experts.

- Have you heard of this advice before?
  - If no: explanation
  - **Antivirus software** is software which is supposed to find, block and, if applicable, dispose of malware, like computer viruses.
- What do you think about this advice?
- Do you yourself use antivirus software?
- Why ? / Why not?
- How realistic do you think it is, that a non-tech-savvy user would actually apply this advice?
  - Why?
- How does antivirus software improve your IT security?
- How useful do you think this advice is for improving IT security?
  - Why? What makes the advice (not) effective/useful in your eyes?

□ Check the duration of the interview
□ If the interview has already taken **half an hour** or longer, then skip the block of questions on password managers.
□ If the interview is shorter, you can continue with the questions on password managers.

Next I want to talk about password managers.
Note for interviewers: This advice has relatively high effectiveness and realism ratings, and is popular with experts.

- Have you heard of this advice before?
  - If no: explanation:
  - **A password manager** is an application, with which users can encryptedly save, manage and use access data, such as passwords or pins.
- What do you think about this advice?
- To which extent do you yourself use a password manager?
  - Why?
- How realistic do you think it is, that a non-tech-savvy user would actually apply this advice?
  - Why?
- How does a password manager improve your IT security?
- How useful do you think this advice is for improving IT security?
  - Why? What makes the advice (not) effective/useful in your eyes?

□ If the questions on password managers where skipped, then continue from here.

Since we have talked about several specific pieces of advice now, I would like to ask you for a short summary:

- What makes IT security advice realistic to apply for you?
- Which aspects influence your judgment of how effective a piece of IT security advice is in protecting users from threats?

And to conclude, I have some questions on your attitude towards IT security advice.

- How do you decide whether to follow an advice or not? *Possibly dig deeper for adoption reasons.*
- Which characteristics make an advice trustworthy for you?
- What role does the source of an advice play for you in this context?

Thank you, that was all from my side. Do you have any questions, or anything else you want to say about this topic?

Give participant some time to think about it, wait for their answer.

Okay, then I will stop the recording now.

□ Stop Zoom recording. (The generation of the files may take a while depending on the duration of the interview)

☐ Stop the recording on the backup device

☐ **Thank the participant for their participation**

Debriefing

Do you have any further questions on the topic or the procedure of the interview?

Possible topics regarding the background of the study/the interview:

- Research questions
  - Why is some security advice rated effective, but not realistic?
  - What factors influence how much security advice is trusted?
- Information on specific pieces of security advice and their choice (see notes for interviews on this topic)

Follow-up work

After the interview

☐ Once Zoom has finished saving: Delete the video recording and chat protocol.

☐ Save audio recording using the naming format yyyy-mm-dd.m4a, and replace **yyyy-mm-dd** with the date of the interview

☐ check whether the audio recording worked

☐ If the audio recording from Zoom did not work, check the audio recording of your backup device and name it using the scheme presented above

☐ Go through your notes on technical terms and digitize them

☐ Hand in: Audio recording (only one working recording, either from Zoom or the backup device), your notes on technical terms and the consent form

☐ Possibly delete the superfluous recording of your backup recording device

2.2 Interview Analysis Task Description

ADMIN

You have access to the interviews assigned to you through [E-learning system]. They are in a folder named *GR-[your group id]-[course]-2*. We have already prepared a MaxQDA-Project for each of you and loaded the interviews to be analyzed. Please use two interviews (marked with initial) to establish a codebook and afterwards code the remaining four interviews with this codebook. In this group-folder there is a also a folder *hand-in*, where you should save hand-ins concerning the coding.

Please make regular backup copies of your work, especially before doing irreversible things, like merging or changing your codebook radically. To do this, close MaxQDA and copy the mx20-project file. Name the backup copies as follows:

- Append the version number to the end of the previous file name.
- Version number in format [submissionnumber.versionnumber]

- Iterate up from version v0-0 (for the file provided by us)
  - Submission number 1 is the file in which you alone code the two interviews and develop your own codebook
  - Submission number 2 is the file in which you use the merged codebook to recode the two interviews.
  - Submission number 3 is the file in which you will code four more interviews using your merged codebook
- *Your submission of your first two independently coded interviews would then have e.g. the version number v1-3 (depending on how often you made backup copies).*

In any case, please do not modify the transcripts yourself, but only add codes and/or memos to them.
Reminder: The research questions we are interested in are:

- Why is some IT security advice rated effective, but not realistic?
- What factors influence how much IT security advice is trusted?

Please analyze and code with respect to these research questions

PREPARATION

Install MaxQDA. Instructions can be found on [E-learning system] along with this exercise assignment. In case you have any problems, please contact us.
Discuss with your team member roughly how large the text segments you want to code should be. Possibilities are e.g.:

- Line-wise (if you choose this, make sure your and your partner's lines are of equal length)
- Sentence-wise
- Partial sentence-wise (Separation e.g. at subordinate clauses etc.)

CODING OF THE FIRST TWO INTERVIEWS

Start with reading the first two interviews carefully. You may take notes, but don't add any codes yet.
Once you are familiar with the content of the first two interviews, start coding. To do this, you mark text fragments and assign codes to them. These codes can be in-vivo-codes, i.e. their phrasing comes directly from the text, or the codes an be abstracted and reformulated by you. A text fragment can also be assigned several codes.
Work through the initial interviews several times and check whether codes you have created later may also relevant for other parts of the interviews. Work alone at this stage and don't discuss with your partner yet.
Consider your codes/your codebook. Which of them belong together or deal with related topics? Group your codes and create categories (if you have not already done this in the last step), so that you build a hierarchical code structure. If it seems to be reasonable, you can also create several levels of categories. It may be useful for more abstract categories (high-level) to orientate towards the research questions.
Now save this version of your codebook and the current state of your coded interviews to the submission subfolder on [E-learning system].

- To export your codebook, on the codes tab, click on Export Code System and then select the .rtf format. Name the file as your project.
- To save the state of your coding, make a backup of your MaxQDA project (file format .mx20)

You should be at a submission number of 1 in your versioning. It is best to upload these files to the delivery folder on [E-learning system].
Now unify your codebooks with your partner. Compare both your codebooks and how you assigned codes.

- Which of your codes and categories are similar? Agree on a wording for the code tag.
- Have you assigned similar codes to similar text fragments? Why?/Why not?
- Which of your codes and categories are different? Do you want to adopt several of them or discard some codes or categories?

If you want to see the codebooks together in one project, you should make a backup first. To do this, you have to select the option Teamwork under the Start tab (more info **here** under the heading *Transfer elements – Teamwork export and import* and **here**.

- One of you has to do Teamwork Export.
- In the following dialogue, select all of your documents and all of your codes.
- The result is a .mex file.
- The other one of you selects Teamwork Import
- Select all of your codes and files again in the following dialogue. As conflict resolving process, select *Use outer segment boundaries of the code assignments*.

Now you should have both codebooks available in one project and be able to edit them. It is not possible for two people to work together on the same MaxQDA project, so for this step it is a good idea for one team partner to activate screen sharing and work on the project while the other partner provides advice. Agree on one codebook (which can/should contain elements of both of your individual codebooks).

In order to work in a consistent manner, you should create definitions for your codes and categories and describe for which cases a certain could should be assigned. You should save these definitions in form of code memos in MaxQDA. Save this unified version of your codebook and use the export function again, to get the codebook in the .rtf format. In your versioning, your submission number should now be 2. It is best to upload the file directly into the submission subfolder. Even if both group members now use the same codebook, please upload the unified codebook for each group member.

Using the unified codebook, work through both initial interviews and code them again. Again, it may be useful to go through both interviews several times. For this step, work alone again without consulting your partner.

Then save the current status of your coded initial interviews by creating a backup copy of the MaxQDA project. In the versioning you should be at submission number 2. It is best to upload these files to the submission folder of your group right away. Again, each group member should submit a separate project file.

CODING OF THE REMAINING FOUR INTERVIEWS

Next, you will code the remaining four interviews using your unified codebook. To do this, proceed in a similar way as you did for the initial interviews and work alone in this phase. Mark relevant text fragments with the codes from your unified codebook and work through the four remaining interviews this way.

During the coding process, aspects may come up in the four additional interviews that were not present in the initial interviews and therefore are not covered in your codebook. In such cases, you can revise your codebook and add new codes or rename/extend old codes and adjust their definitions. Discuss the changes with your partner and agree on a procedure so that you continue using the same codebook. You don't have to call a meeting every time you change a code, you can also tell your team partner when you add a new code and only meet if they don't find it useful.

Finally, you should go again through all six interviews with your final codebook and check that the codes you assigned are still appropriate and correspond to the final codebook.

Now save this version of your codebook and your coded six interviews. For the codebook, export another .rtf file and name it as your project. You should now be at submission number 3.

COMMUNICATING RESULTS

Discuss the result of your analysis with your partner: the final codebooks and the developed codes. Depending on how reduced the top level of your codebook already is, you should make further groupings and sortings so that you have only 3-8 categories on the top level. Also consider how these are related and what the link between the categories is. Using the “MaxMaps” function of MaxQDA (start the help on this topic **here**) or another mindmapping tool, design a mind map that represents your analysis results. MaxMaps works similarly to the *creative coding* interface you’ve already encountered for organizing and unifying your codebooks. The main difference is that in Creative Coding, changes you make to the code system (renaming, adding or deleting codes, etc.) are then reflected in your codebook. This is not the case for MaxMaps, but here you have the possibility to add further elements, e.g. line labels or similar. This mind map does not have to contain all your codes and categories, you can limit yourself to the ones you find important.
Save and upload this mind map as .png file (function Export MaxMap) right away to the submission folder in the [E-learning system] folder shared with your partner.

SUBMISSION

Please submit the following files in the [E-learning system] folder:

- The first version of your codebook (that you have developed individually), as .rtf file (versioning 1-x)
- The first version of the interviews coded by you (initial interviews) – i.e. the .mx20 file of your project (versioning 1-x)
- The second version of your codebook (that you have unified together with your partner), as .rtf file (versioning 2-x)
- The initial interviews recoded with this unified codebook – again, the .mx20 file of your project (versioning 2-x)
- The final version of your codebook (after you coded all interviews using this codebook, as .rtf file (versioning 3-x)
- All six interviews you coded with this codebook, i.e. the .mx20 file of the final state of your project (versioning 3-x)
- Your mindmap to your research results, as .png file

2.3 Survey Analysis Task Description

This assignment was handed out in form of slides due to practical reasons.
Developing a codebook:

- (Hierarchical) list of codes
- Multi-level hierarchies possible
- Memos to explain codes and note down a common definition
- Process:
  - Start by reading over the advices assigned to you with your team partner
  - Brainstorm codes for the type of advice(can be in-vivo or abstract codes)
  - Group the codes and assign names to the group (= categories)

Coding in Excel (or other spreadsheets)

- Last year: We used MaxQDA (CAQDA-Software)
- This year: No more Microsoft Azure Dev Tools for Teaching available
- MaxQDA is only available for Windows/MacOS
- → Switch to Spreadsheet software

You will receive a Spreadsheet where each row corresponds to one advice from from the survey answers.

- There are separate columns for
  - the participant id
  - From which study the advice came (usage – replication, advice – new version)
  - participant utterance (in this case, the advice)
  - the assigned code (This is your task, Excel makes a suggestion based on previous entries)
- Copy a row of data if you want to assign more than one code
- When adding a new code, also add it to your codebook

Hand-in

- Each group should hand in the following [E-learning system] folder: *Link*
  - our shared codebook (spreadsheet filetype, e.g. .ods or .xlsx), named

your_id1 _[your_id2]_codebook

  - e.g. for us: [naming]_codebook.ods

- After you hand in your codebook, we give you access to the template for your advice data
  - We check for new hand-ins once per day on work days
- Code advices independently
  - If necessary, adjust codebook (If you encounter new themes when looking at details)
- Calculate IRR between you and your team member for your coding

Hand-in

- Each of you individually should hand in the following [E-learning system] folder: *Link*
  - A Zip-file named [your_id1]_coding.zip
    - e.g. for us: [naming]_coding.zip
  - Containing the following:
    - Coded advice: the filled out spreadsheet (subsample_[x].csv)
    - Your codebook file
    - IRR value in a txt file

3 META-LEVEL ANALYSIS OUTCOMES

3.1 Interview Content Codebook

- Other ideas
  - adoption process
- Relationships
  - Realism - trust
  - Effectiveness - realism
  - Effectiveness - trust

- Effectiveness
  - Plausibility
  - Protection
    - Threatening of protection
    - No protection
    - Not best possible protection / limited protection
    - Protection use case dependent
    - Protection improved
    - Protection (advice protects)
  - Technical
  - Effort
  - Cost-benefit considerations
  - Usability
  - User characteristics
- Realism
  - Feelings of security
  - Future-proof advice
  - Source
  - Protection improved
  - Popularity /coverage / media
  - Fear of consequences
  - Expert knowledge
  - Plausibility
  - Force / compulsion
  - Use case dependent
  - Raising Awareness
  - Habit
  - Cost-benefit considerations
  - User characteristics
  - Effort
  - Usability
  - Additional utility
- Trust
  - Technology
  - Relevance
  - Plausibility
  - Popularity / coverage / media
  - Social context
  - Expert knowledge
  - User characteristics
  - Source

3.2 Survey Content Codebook

When developing our codebook, we started with the codebooks of Busse et al. [1] and Ion et al. [2] and extended it with new codes. Original codes come in standard font while newly created codes come in *italic font*. Codes that were included in the codebooks of the prior work but have not been assigned in our study are listed below our codebook.

- New in student work
  - *Developer specific measures*
  - *Protect companies / critical infrastructure*
  - *Junk*
- Account security
  - *Store passwords safely*
  - *Don't use auto-password login*
  - *Terminate unused accounts / software*
  - *Use patterns*
  - *Use PINs*
  - *Use passwords*
  - *Use biometrics*
  - *Generate passwords*
  - *Don't share authentication*
  - *Always log out*
  - Change password
  - Don't write down passwords
  - use a password manager
  - Use strong passwords
  - Use unique passwords
  - Use two-factor authentication
  - Write down passwords
- Mindfulness
  - *Keep devices safe*
  - *Don't share devices*
  - *Ask for help*
  - *Avoid phishing / scam*
  - *Hide data*
  - *Protect personal information*
  - *Use privacy settings*
  - *Clear browsing history*
  - *Close browser after use*
  - *Use throw-away accounts*
  - *Use fake identities*
  - *Selective sharing of information*
  - *Cookie specific precautions*

  - *Inform yourself*
  - *Be suspicious of files*
  - *Be suspicious of e-mail*
  - *Be suspicious of downloads*
  - Don’t open email attachments
  - Don’t click links from unknown people
  - Be careful when online
  - Be skeptical of everything
  - Be suspicious of links
  - Check if HTTPS
  - Clear cookies
  - Don’t share info
  - Look at the URL bar
  - Visit only known or trusted websites
- Security software
  - *Use cloud storage*
  - *Backups*
  - *Use different search engines*
  - Use a VPN
  - Use antivirus
  - Use a firewall
  - Use incognito browsing
  - Use script and/or ad blockers
  - Use security software in general
- Updates
  - *Update device*
  - Install latest OS updates
  - Update applications
  - Update system
- Technical
  - *Check logs / search for anomalies*
  - *Defragmentize hard drive*
  - *Use only your own system*
  - *Use encryption*
  - *Use only secure/not public WiFi*
  - Use verified software

Codes that were included in the codebooks of prior work [1, 2] but have not been assigned in our study:

- Save passwords in a file
- Don’t enter passwords on links in e-mail
- Turn on automatic updates

- Compartmentalize systems for different tasks or levels of security
- Employ virtual machines
- Use linux

4 PC MEMBER SURVEY

4.1 PC member survey

DEMOGRAPHICS

- Do you consider yourself mostly a
  - qualitative researcher
  - quantitative researcher
  - both qualitative and quantitative researcher
- Approximately how often have you been a PC member for SOUPS?
  - 1-2
  - 3-4
  - 5+
- Do you currently work in ...
  - Academia
  - Industry
  - Other – please specify *Text-input field*

In general, how important are the following quality criteria for you when you are reviewing qualitative SOUPS papers?

- More than one researcher is involved in coding the data.
  - Very important
  - Somewhat important
  - Somewhat unimportant
  - Very unimportant
  - I don't know
  - It depends *Text-input field*
  - Not applicable
- The method used for coding and data analysis is identified clearly - by describing in detail how the coding and data analysis was done.
  - Very important
  - Somewhat important
  - Somewhat unimportant
  - Very unimportant
  - I don't know
  - It depends *Text-input field*
  - Not applicable
- A method of reaching agreement about coding is described in the paper.
  - Very important
  - Somewhat important

  - Somewhat unimportant
  - Very unimportant
  - I don't know
  - It depends *Text-input field*
  - Not applicable
- Full agreement is reached by the end of the analysis process, i.e. all differences in coding are resolved.
  - Very important
  - Somewhat important
  - Somewhat unimportant
  - Very unimportant
  - I don't know
  - It depends *Text-input field*
  - Not applicable
- A numerical measure of interrater reliability (e.g. Cohen's Kappa) is reported.
  - Very important
  - Somewhat important
  - Somewhat unimportant
  - Very unimportant
  - I don't know
  - It depends *Text-input field*
  - Not applicable
- When reviewing a study where short, textual survey responses are coded, such as the security advice in the Ion et al. (2015) paper "No one Can Hack My Mind", which coding practices do you consider acceptable? Please select all that apply.
  - Two coders coding separately
  - Two coders coding jointly
  - Two coders coding a subset jointly and the rest on their own
  - I don't mind
  - Other – (please specify) *Text-input field*
- When reviewing a study that analyzes complex answers such as from interviews, which coding practices do you consider acceptable? Please select all that apply.
  - Two coders coding separately
  - Two coders coding jointly
  - Two coders coding a subset jointly and the rest on their own
  - I don't mind
  - Other – (please specify) *Text-input field*
- What is the minimum final level of agreement that is acceptable to you? Categories are according to Landis & Koch (1977)
  - Poor (e.g. Kappa < 0.0)
  - Slight (e.g.Kappa 0.0 - 0.2)
  - Fair (e.g. Kappa 0.21 - 0.4)

  - Moderate (e.g. Kappa 0.41 - 0.6)
  - Substantial (e.g. Kappa 0.61 - 0.8)
  - Almost Perfect (e.g. Kappa > 0.8)
  - I don't require a specific agreement level - only that one is reported
  - I don't require any reporting on agreement
  - It depends - please specify *Text-input field*
- For which phases in the coding process should a numerical form of interrater reliability be reported? Please select all that apply.
  - After codebook establishment
  - After each separate step in the analysis process where data is coded independently
  - After coding is completed
  - I don't think a numerical form of interrater reliability needs to be reported
  - Other – please specify *Text-input field*
- Analysis of qualitative content is a complex process. What else is important to you when you are reviewing qualitative SOUPS submissions? (optional) *Text-input field*

4.2 PC member survey codebook

- Coding phases
  - Iterative calculation
  - After coding is completed
  - Importance of coding phases
  - It depends
  - When codebook is stable
- IRR concrete values
  - Moderate
  - Wants Kappa and specific value
  - I don't require a specific agreement level - only that one is reported
  - I don't require any reporting on agreement
  - Substantial
  - Substantial / almost perfect
- Additional quality criteria
  - Researcher background
  - Exploration of alternative hypotheses
  - Quantified statements, pro and con
  - Depth of analysis / interpretation
  - Study design
  - Impact of results
  - Justification
  - Research goal
  - Examples for coded text snippets
  - Detailed description into how

        - Additional material
- Quality criteria reasoning
    - Method (qualitative analysis framework)
    - Not necessary, but not harmful either
    - Novelty of method
    - Not applicable
    - Generally good
    - Methods need to be justified
    - Exceptions possible
    - Trust in methods text is overrated
    - Type of study
        - Amount of data
        - Complexity
        - Codebook size / detail
        - Data sources
        - How coding results are used
        - Type of analysis
            - Reproducibility
        - Claims (results)

REFERENCES

[1] Karoline Busse, Julia Schäfer, and Matthew Smith. 2019. Replication: No one can hack my mind revisiting a study on expert and non-expert security practices and advice. In *Proceedings of the Fifteenth symposium on usable privacy and security (SOUPS 2019)*. USENIX Association, Santa Clara, CA.

[2] Iulia Ion, Rob Reeder, and Sunny Consolvo. 2015. “...No one can hack my mind”: Comparing expert and non-expert security practices. In *Proceedings of the Eleventh symposium on usable privacy and security (SOUPS 2015)*. USENIX Association, Ottawa, 327–346.