Smart Cities for Women’s Safety: How Feminist solution should look like for different cities around the world

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Problem

- 1 in 3 women experience abuse [UN News]
- Cities are a big problem [UN Women]
- Technology can help women to feel safer in the city [Chang 2019]
- Many current technologies do not help with the problem [Kaur et.al 2017] [Kurasala et.al 2022]
Research Question

- What is **common** and what is **different** in the expectations from the Smart City technology in regard of safety from women around the world?
Feminism and Technology

Feminist HCI Qualities [Bardzell 2010]:

- Participation
- Advocacy
- Ecology
- Embodiment
- Self-Disclosure
- Pluralism
Co-Design Method

Get to know each other

- Introduce yourself
- What is your name? How should we call you? And what are your pronouns?
- How long have you lived in your city?
- Where you used to live?
- What’s your favorite hobby?

Check-in

- Do you have any unanswered questions about the study?
- What are your expectations for today’s meeting?
- What are your goals?

Problem Definition

Goal: Come up with a solution of making users feel safer for women through Smart City Technology

Solution ideas

- Smart city
  - A smart city is a technologically modern urban area that uses different types of electronic methods and sensors to collect specific data. Information gained from that data is used to manage assets, resources, and services efficiently. In return, that data is used to improve operations across the city. [Wikipedia](https://en.wikipedia.org/wiki/Smart_city)

Solution Concept

- Scenario
Participants and Cities

- Women or born as female and presenting/being perceived as women
- 18 year old or older
- Lived in the city for 1 year (moved less than 3 month ago)

8 focus groups with 2 participants

- 3+ million citizens
- Rated in the Smart City Index 2021

#19 Melbourne
#50 Berlin
#104 Cairo
Analysis
## Analysis: Coding

### Code System

<table>
<thead>
<tr>
<th>Code System</th>
<th>Count</th>
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<tbody>
<tr>
<td>Problems</td>
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<td>Context</td>
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<td>Safety Strategies</td>
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<td>hesitation about solution</td>
<td>432</td>
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<tr>
<td></td>
<td>34</td>
</tr>
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**P081:** Yeah, this actually I was with my boyfriend in that situation. So, we were riding the sub dad and That was this guy coming to us asking for money? And he’s really worn down and like walking on a stick and really smelled really bad was it was really weird. And we said like, No, thank you. Like we don’t have any money And then he really started shouting and screaming at us and not in a normal way. Just calling us something. But he really from the bottom of his heart, he just directly screamed at us and came directly to our faces. And I.

**Researcher:** oh,

**P081:** Yeah, and I really, I really was just like doing nothing just in shock.

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**P091:** No, I was thinking about the situation when like beggars approach you and asking for some money and I usually try to avoid it and I was successful avoiding it. So I was I wasn’t able to figure out like what is my problem because I just need to go away. but reading this card, I realized that they usually not usually but they can also react on Your answer like in a bad way like studying or I don’t know just give you a bad name or something.

**Researcher:** You can write it down while P081 read and explains hers.
Analysis: Themes

- **MAXQDA Tools:** Open Coding + Creative Coding
Results Outline

- Patterns in Data
- Comparison of the Cities
- Feminist Smart City Solutions Requirements
Patterns in Data

● Codes are similarly distributed

● Level of participation influences the data

MAXQDA Tools: **Matrix + Visualisation**
Patterns in Data

- Most mentioned themes are present for all cities
- Most mentioned problems were chosen to work on
- Themes define each other

MAXQDA Tools: Matrix
Comparison of the Cities

● Problems are similar but context differs
● Biggest problems define strategies and focus of solutions
● Strategies that women use already are similar

• Berlin
• Melbourne
• Cairo
Feminist Smart City Solutions

- Technological ideas overlap: Alarm Buttons, Tangible technology, Cameras, Tracking...

- Goals and aspects of the solutions depend on context: Culture, Laws, Historical Development, City Layout, Demographics.

- Berlin
  - Avoiding weird people

- Melbourne
  - Monitoring getting home safe

- Cairo
  - Arresting the harasser
Feminist Smart City Solutions:

- Preventive Measures
- Reactive Measures
- System Adjustments
- Reporting Support
- + Local Context
Conclusion

- Safety Smart City Solutions should always include the 4 key factors and acknowledge the local context.
- Inclusive Solutions can be created by involving women early on and Feminist HCI Qualities can be a base for it.
- Co-Design Method altogether helps to find deep insights on the solutions expectations.
Takeaways

- Qualitative research and creative methods can be hard to carry out and analyse but the results worth it.
- Finding out MAXQDA tools for Creative Coding, Data Visualisation and Codes Matrixes allows to work with big and unstructured data.
- Working through your codes with different tools and going from high- to low-level of data abstractions opens new perspectives.
Feminism in research is about inclusivity
Questions