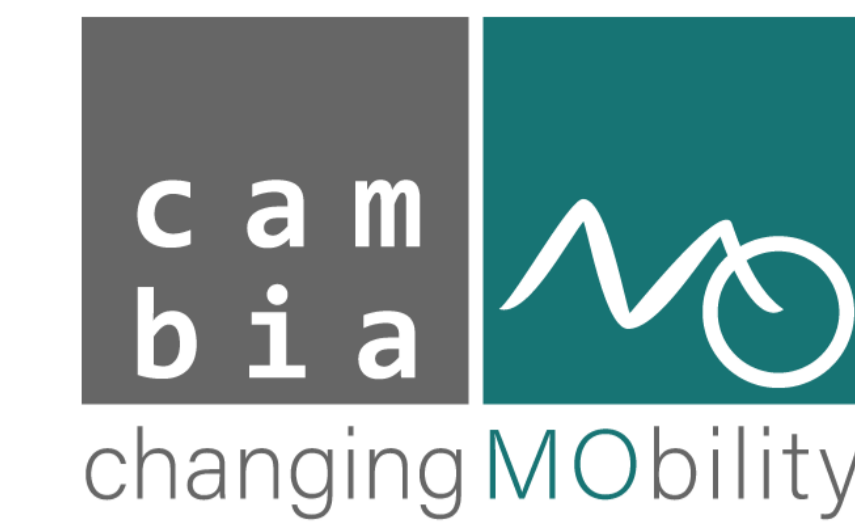


# A GENDER DIVIDE IN THE DIGITAL MOBILITY SERVICES?

## A Thematic Analysis of Digital Mobility Services Adoption with a Gender Perspective

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### ABSTRACT

Inspired by the **multidisciplinary research on travel behavioral processes**, this paper focuses on understanding perceptions, capabilities, and requirements in the adoption of digital mobility services by people in situation of vulnerability.

Since the **current quantitative methods** of large random sample size present **difficulties in capturing the perceptions and needs** of part of the target-group populations especially when these groups **intersect various characteristics i.e., women-caregivers** and low income- with lack of digital skills, this paper explores how can we expand our data collection effort to include a diverse population, and identify their behaviors, and needs.

Based on the European research project INDIMO - INclusive Digital MObility solutions, this paper adopts a user-centric approach with qualitative data gathering in two sites in two diverse countries: Berlin-Germany, and Galilee-Israel, comparing **two digital mobility services that target women**, the on-demand ridesharing and the informal ridesharing.

Results and insights show:

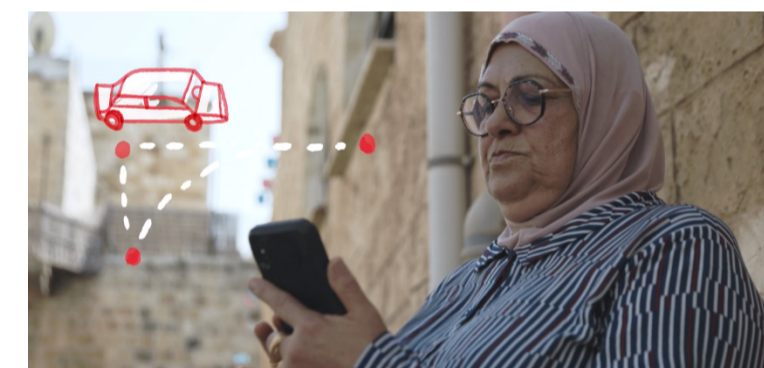
1. that **digital mobility reproduces the traditional digital gender divide**
2. the **humans behind the digital interfaces** build confidence and empower users in the adoption of a digital mobility service.

### DATA AND METHODS

#### User Profiles of the INDIMO Pilots

**GALILEE** Informal ride sharing in ethnic towns

- Ethnic minority man/women
- Residing in the periphery
- Insufficient public transport services
- Language barrier
- Lack of digital skills

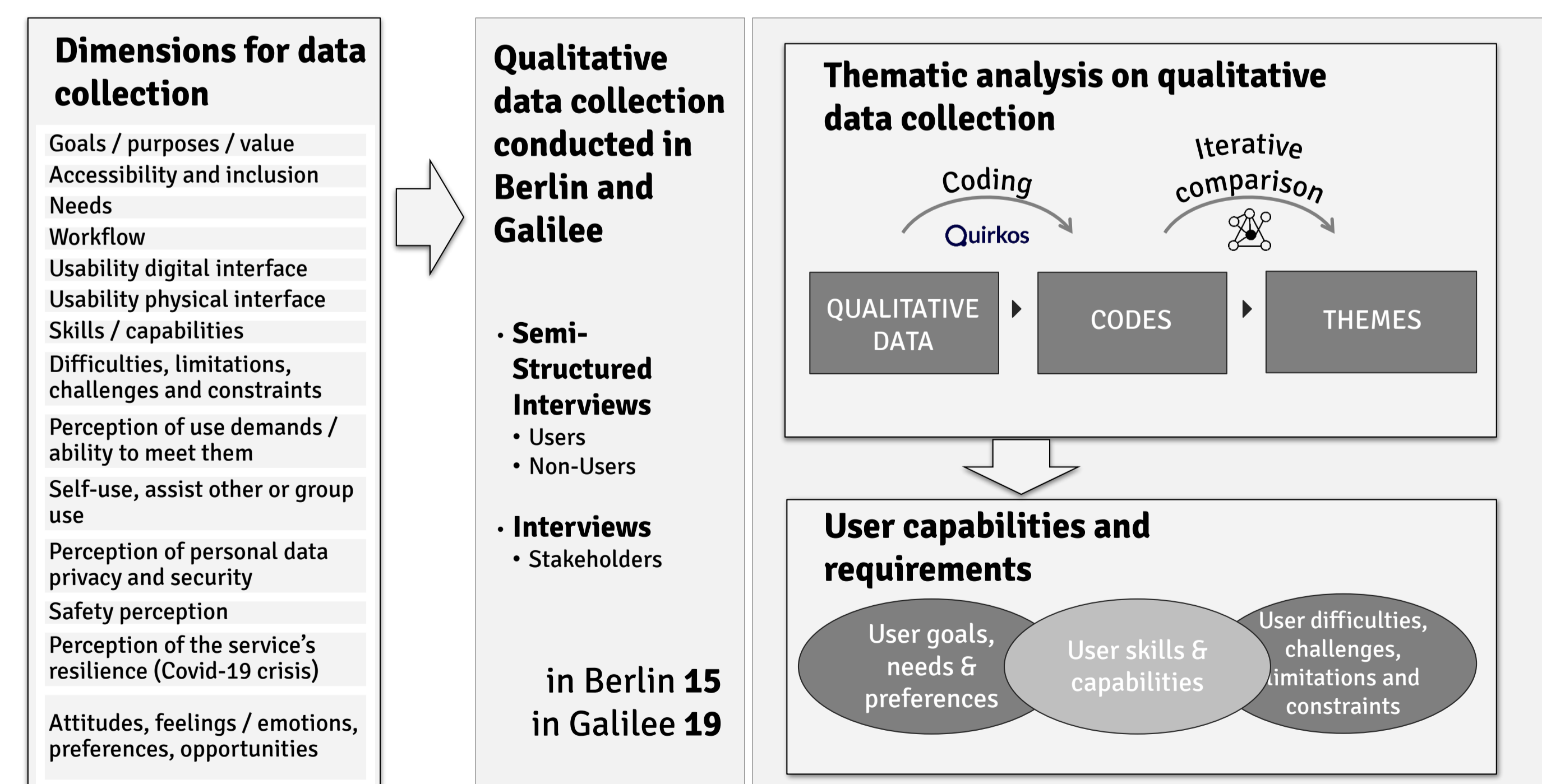


**BERLIN** On-demand ridesharing integrated into multimodal route planning

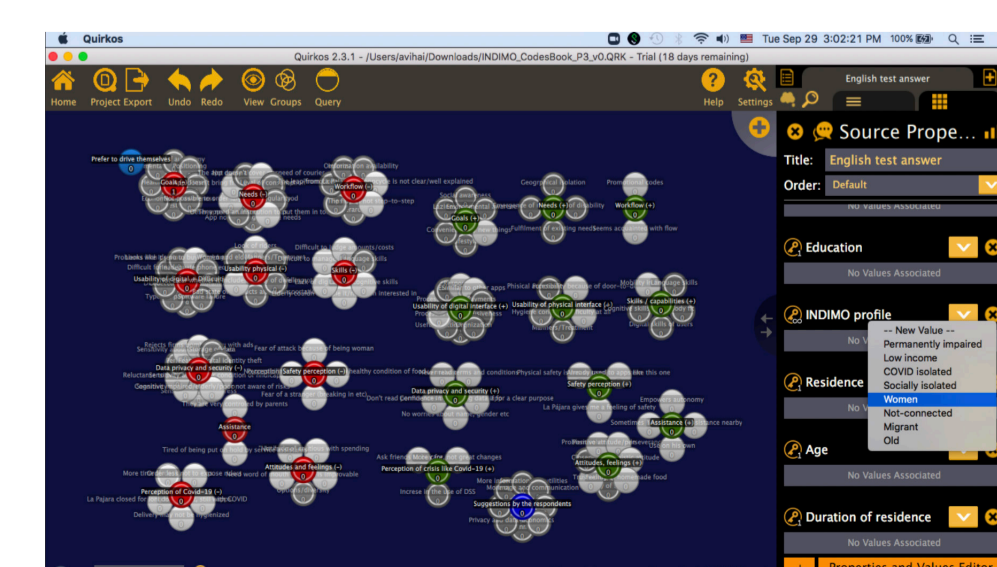
- Caregivers of children/ impaired/ elders
- Gender: women
- Lack of services (reduced mobility)
- Lack of digital skills
- Residing in peripheral locations



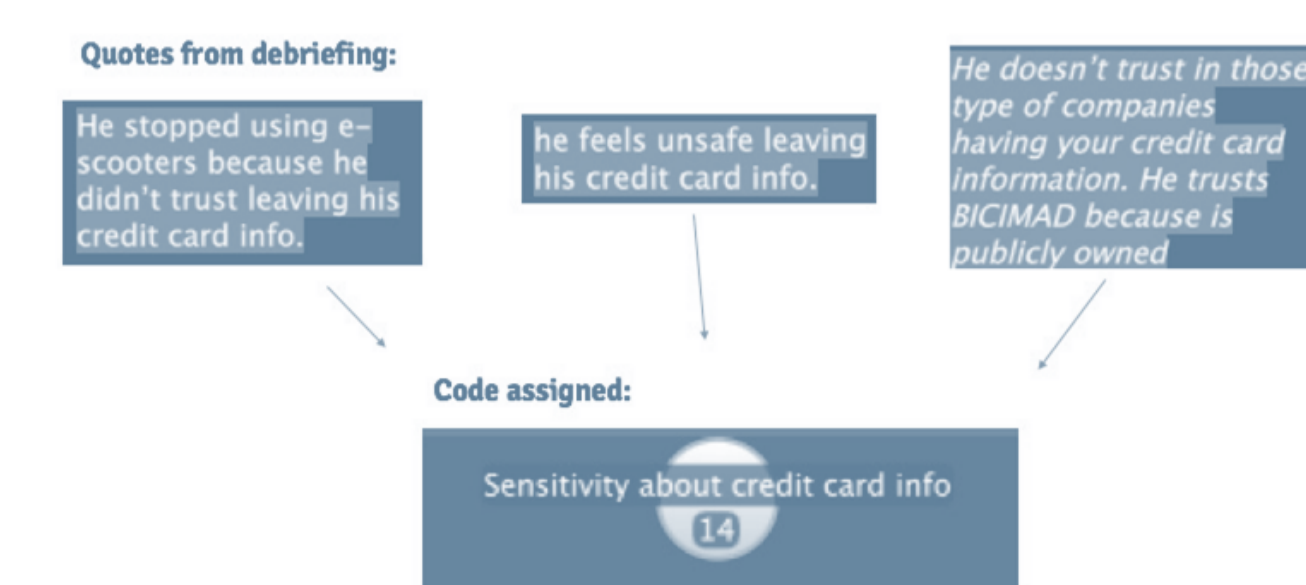
#### Framework for Data Collection Analysis including Interviews, Coding, and Thematic Analysis



#### Quirkos CAQDAS - Computer Assisted Qualitative Data Analysis



#### Example of Technique Used for Codes Definition



### RESULTS

Given the specificities of each pilot in Galilee and Berlin, and the fact that the service proposed is different in nature, the thematic analysis has been conducted pilot by pilot, and a summary of the thematic analysis, and the main findings are presented in both tables below:

#### Summary of Themes, and Related Requirements for Galilee pilot

Theme	Findings on Users' Requirements
Cultural barriers that limit women's ridesharing	The presence of a strong social norm implies that women need to ask for familiar approval to ride a vehicle with others than members of the family. In this context, the family of the woman is part of the decision process and may limit the user's autonomy.
Fears about security	The greatest fears of the potential users are related to security: the possibility of threats such as being followed, being attacked, harassed, or insulted.
Digital barriers	A profile of potential users: low-connected rural villages with the oldest populations accustomed to do things in the traditional way.
Difficulties to adapt the map to geographical reality	Some characteristics of the land, and its history, and the customs of inhabitants make the mapping complex. The matching between the geographical space, its nomenclature, the practical use of this nomenclature by the users, and the digital mapping is key to develop this project.
Ridesharing as potential substitute of public transport	The type of everyday use, work, and study use that the ridesharing receives, approaches it to the role of public transit. Where there is transport poverty, ridesharing quickly replaces the role of public transit, being more flexible than taxi services.
COVID-19 crisis	Like Berlin, fears of sharing enclosed space with strangers, and perception of enlarged COVID exposure. This "fear of sharing" merges with cultural barriers, and social norm of disapproval of women sharing spaces with strangers without family consent.



#### Summary of Themes, and Related Requirements for Berlin pilot

Theme	Findings on Users' Requirements
Children-friendly service (with Budapest case study inputs)	There are many details that a mother needs to know before ordering a taxi or ridesharing service. These details are often overlooked by mainstream services, which are designed for people without children.
Social pressure/ view on children	Users are interested in the image, and the reaction that others have about their children. Whether their children disturb, whether they can delay the service for other users, how others interact or do not interact with them.
A mode in a network with many options	The service is overlapping with other quality options of mobility. Public transport, and even bikes appear as valid alternatives for mothers.
Identity of mothers above other identities	When mothering, the identity of mother is over other identities, and shapes the perception of reality.
Service choice as a personal statement	Several respondents value social, and environmental aspects related to the app
COVID-19 crisis (with Budapest case study inputs)	While an opportunity window is offered to ridesharing for avoiding public transport, some concerns appear around little space, and enclosed spaces, and are identified such as a barrier for the use of this service.
Children-friendly service (with Budapest case study inputs)	Mothers before ordering a ridesharing or taxi service, need to know many details in advance. Mainstream services tend to forget to provide these details and are usually designed for people with no children.
Social pressure/ view on children	Users are interested in the image, and the reaction that others have about their children. Whether their children disturb, whether they can delay the service for other users, how others interact or do not interact with them.
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### DISCUSSION

The research behind this paper was framed in the **users' experiences, and preferences about digital services or applications**. It moved forward towards the identification of requirements of current, and future users with regards to the digital interconnected transport systems. The methodology compromised user, and non-user in depth-interviews, stakeholder interviews; literature analysis; **groups of discussion such as Communities of Practices (CoP)**.

Needs vary across population groups, and geographical sites, but there are threads such as "Space", "Time", and "Trust & Human Contact" that are points of contact, and common areas for both pilots, and their specific profiles of users, and non-users.

**Space-related needs** are associated with the **lack of infrastructure, transport poverty**, and difficulties for personal mobility, in that case mainly for **a lack of public services**, the caregivers' **duties of the women**, and the **cultural, and language barriers**. Some settings, such as the dispersed villages of rural geography in Galilee or the scattered, and less densely connected peri-urban landscape in Berlin contributed to a feeling of inadequacy in the current transport setting, and it enhanced the potential of Digital Mobility Services (DMS), and Digital Delivery Services (DDS). **Time-related needs** are associated with the good use of the variable time; **time needs to be flexible**, adapting to the user demands, and at the same time punctuality of different services is highly valuable, especially in the context of mobility of care.

Finally, with regards to trust, and human contact, there is **a demand for human presence** and assistance behind the services that cannot be completely replaced by automation of features. Contact with human people, **even through technological channels**, is a valuable source of inclusion, and a cornerstone of **trust building**.

Most of the literature on user-centered approaches to include these target groups mainly covers the feedback given by the app (through sounds, tones, pop-ups) but does not emphasize sufficiently the importance of the humans behind all the digital interfaces, the **need for direct contact** with other humans, to **give confidence, and empower the user**.

### CONCLUSIONS

A comparison of **themes among the Galilee, and Berlin pilots**, and their points of contact provides **the elements for nourishing a specific section on the mobility of caring**. Mobility of care appears in the interviews and **provides evidence about the importance of digital services to contribute to the needs related to this type of mobility** (i.e. leaving the children at school, visiting the doctor or the pharmacists, catering food for the family, and accompanying a person with reduced mobility or vision to their destinations).

**The details of the travel behavior caring-oriented are less identifiable through a quantitative data collection, at least that a specific survey oriented to the mobility of care to intersectional women target-group is carried out.**



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