

Visualization on smart wristbands: results from an in-situ design workshop with four scenarios

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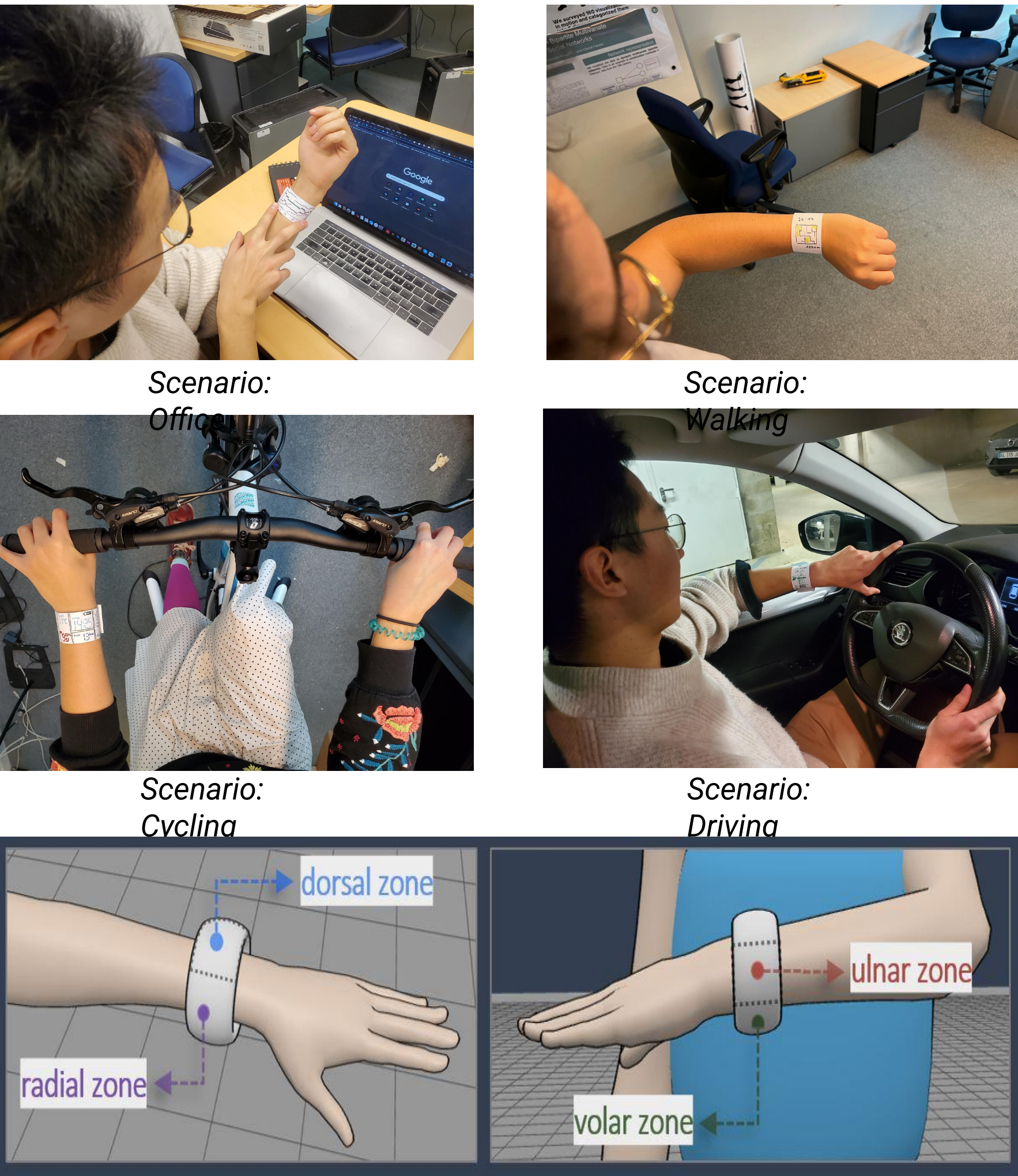


INTRODUCTION

Smart wristbands present a potential alternative to smartwatches by addressing two key limitations: limited display space and fixed display location on the arm. While prior work has explored contextual usage scenarios, visualization choice, layout, and design for smart wristbands remain underexplored.

METHODOLOGY

We conducted an in-situ design workshop in routine activity contexts

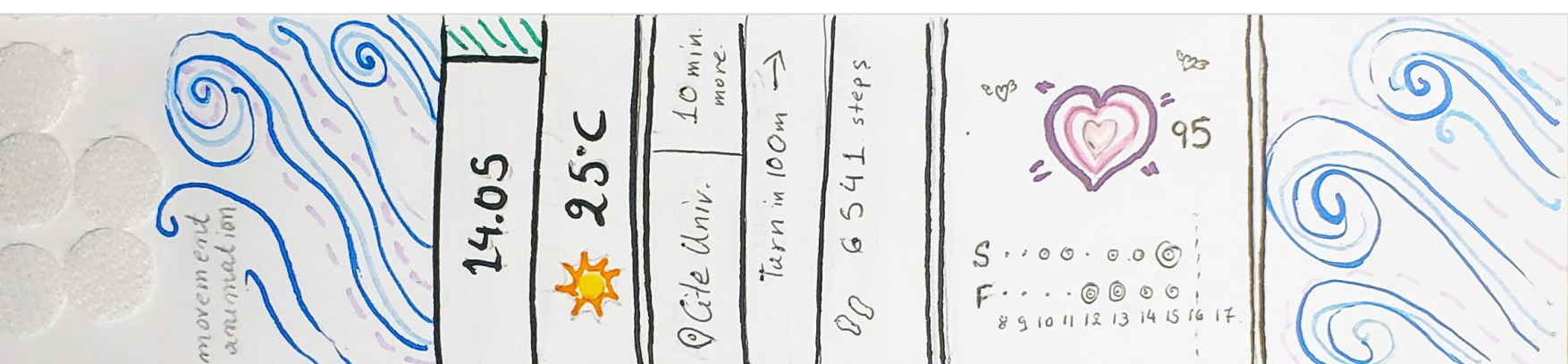


Illustrations showing the 4 wristband display zones: dorsal, radial, volar, and ulnar.

- Participants used a paper wristband prop in four scenarios: office work, walking, cycling, driving
- For each scenario, participants:
 - imagined the activity while wearing the wristband in context
 - sketched a wristband face including time, battery, temperature, heart rate, and additional data types
 - refined sketches off-wrist
 - wore the wristband again and explained their design
- Photos captured each design in context
- Designs reviewed and discussed with the study researcher

DISCUSSION

Design considerations for smart wristband displays:



Create context-dependent display zones



Use space for detailed or additional information



Adjust visualizations based on postures

OBJECTIVE

To explore untapped opportunities for visualization on smart wristbands by understanding users' preferred data types and investigating how spatial layout should be designed in different usage contexts.

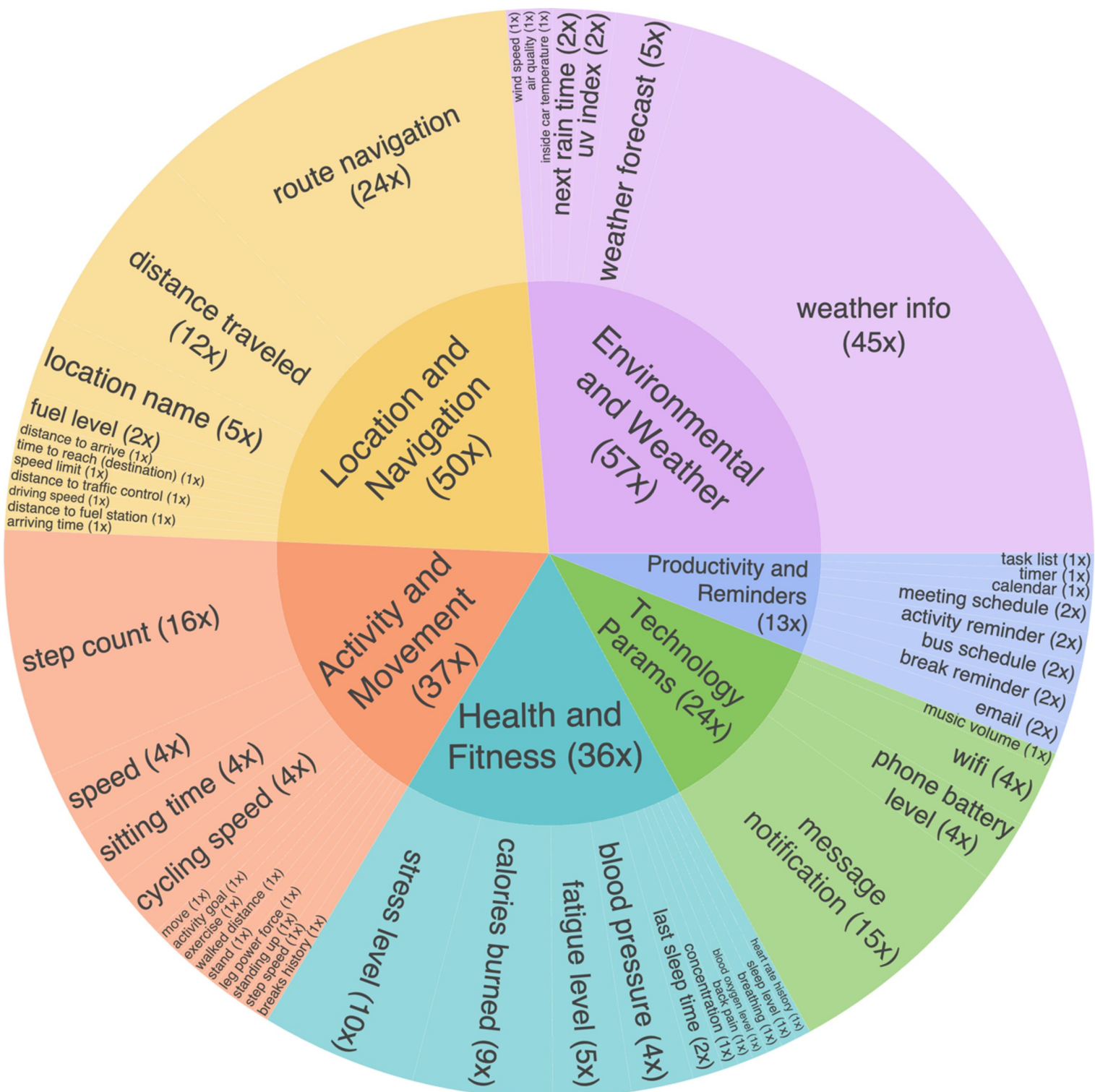
RESULTS

A total of 64 sketches were collected from 16 participants



Examples of 8 participant sketches across four scenarios, showing data placement in the four display zones: volar, ulnar, dorsal, and radial.

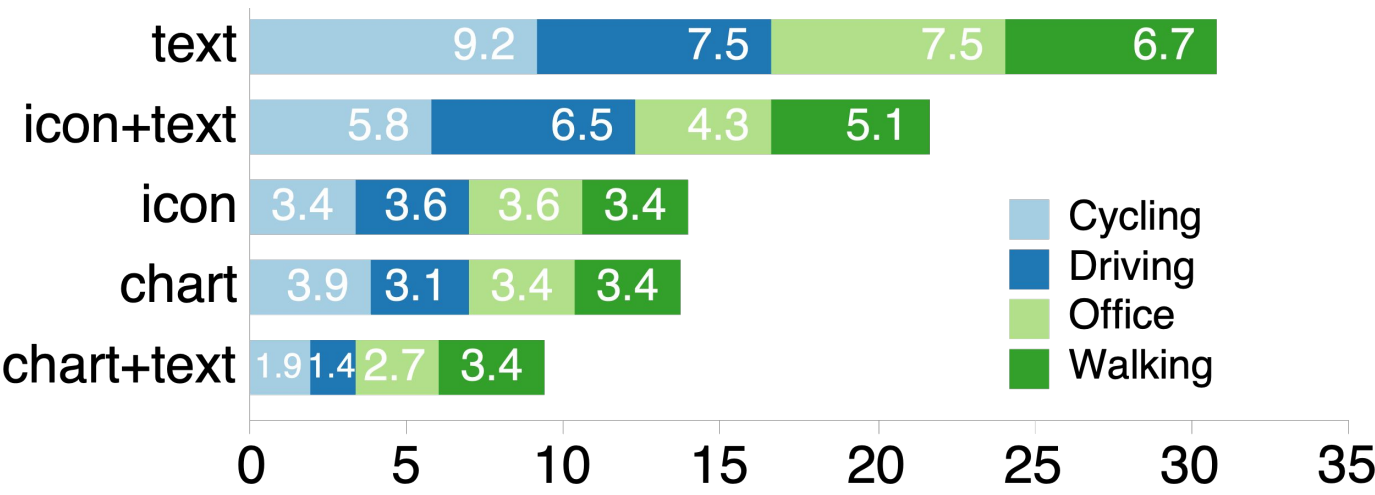
Preferred wristband data and representation locations in participant sketches



The participants reported data items according to six data categories.

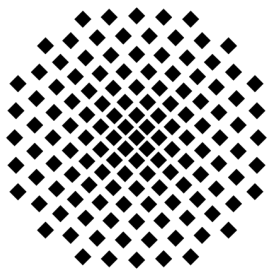
	Ulnar zone	Radial zone	Volar zone	Dorsal zone
Activity & Move.	1	8	8	21
Env. & Weather	13	4	23	92
Health and Fit.	10	18	69	31
Loc. & Navigation	4	9	5	4
Prod. & Reminders	6	7	16	62
Technology Params	94	7	16	62

Spatial layout preferences reported by display zones: ulnar, radial, volar, dorsal and by data categories.



The distribution (in %) of the top five data representation types from 12 types reported in four scenarios.

Acknowledgment: We thank the participants of our design workshop. This work was funded by ANR grant ANR-18-CE92-0059-01 and DFG grant EXC 2075-390740016.



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