Pilot Study on the Opinions on and Acceptance of Obscure Biometrics: Odor, Gait and Ear Shape

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Study Motivation

➢ Biometric authentication is everywhere, and becoming more prevalent [1].

➢ Many biometric authentication methods are unutilized on devices like smartphones.

➢ Focus on 3 unfamiliar biometrics: ***Odor recognition***, ***Gait recognition*** and ***Ear Shape recognition***.

Research Questions

1. How familiar are participants with ear shape, odor and gait recognition technologies?

2. What are participants' perceptions of these obscure biometric technologies?

3. Are participants willing to adopt these technologies?

Methodology

Participant Criteria:

➢ 18+   ➢ Variety of backgrounds   ➢ At least 25 participants   ➢ Varying prior experience with biometrics

Study Structure:

- Semi-structured interviews
- Comprised of five parts:
  1. Background biometric experiences
  2. Initial impressions of obscure biometrics
  3. Explanations provided for all biometrics
  4. New impressions of each biometric
  5. Scenarios involving all biometrics and follow-up questions.

Analysis

Thematic analysis [2] complemented by emergent coding [3].

Preliminary Study

Pilot study objective: to evaluate the quality of the proposed study and identify any necessary changes to the methodology.

Pilot Participants

- Ages 18-24 and 50-60
- Students, professionals
- Technological experience varied

All participants:

- All had experience with biometrics.
- All could define adequately what biometric authentication was.

None of the participants:

- Were familiar with ear shape, odor, or gait recognition.
- Accurately guessed how each biometric worked (but guessed the fundamental biometric of each method).

Other findings:

- Gait recognition was not perceived well.
- Participants were skeptical of odor recognition – did not think it would work.
- Only 1 participant discussed privacy concerns.

[1] https://www.mercatoradvisorygroup.com/Reports/Biometrics--Driven-by-Standardized-Authentication_-Adopted-by-Consumers/
[2] Michelle E. Kiger & Lara Varpio (2020): Thematic analysis of qualitative data: AMEE Guide No. 131, Medical Teacher, DOI: 10.1080/0142159X.2020.1755030
[3] J. Lazar, J. H. Feng, and H. Hochheiser, Research methods in human-computer interaction. Cambridge, MA: Morgan Kaufman, 2017.