Report

# Challenges and Solutions in AI Implementation in Public Social and Healthcare Services in Finland

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# 1. Background

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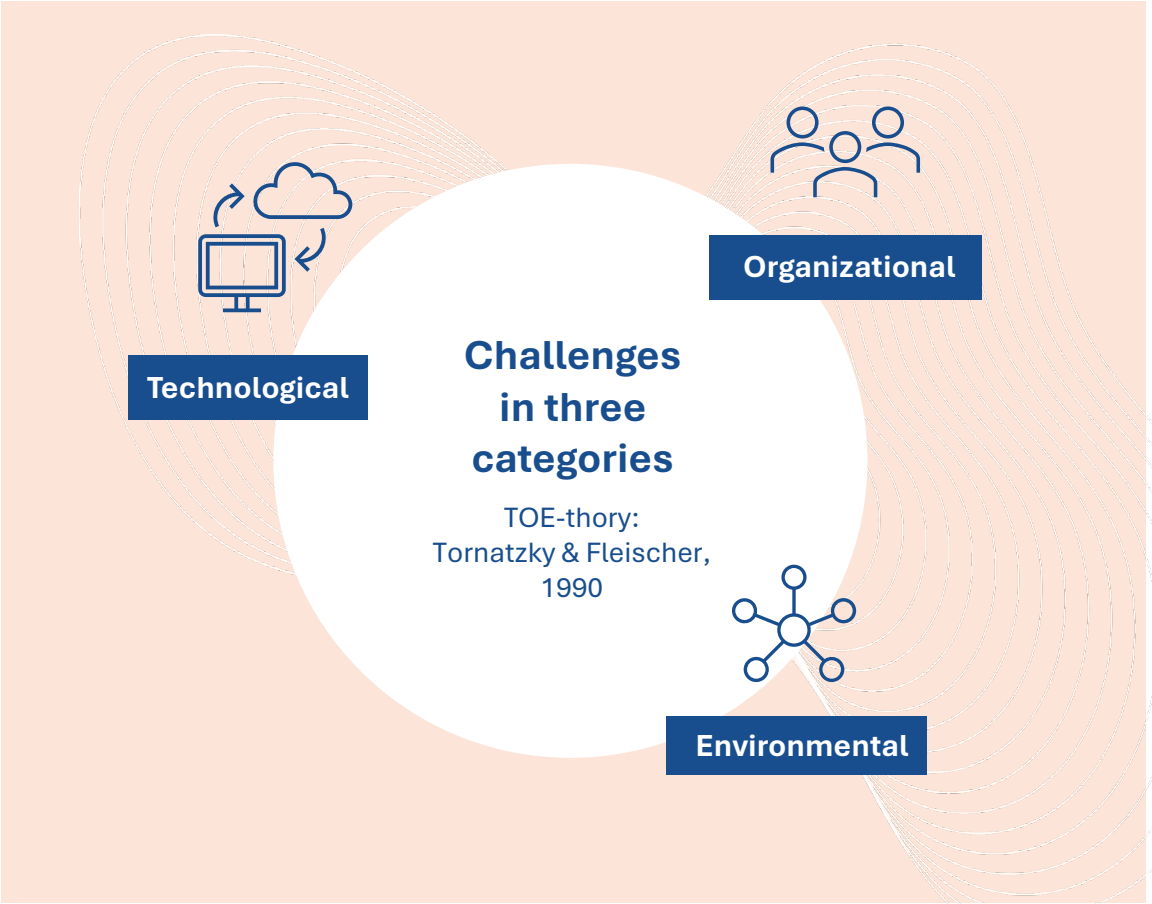
Doctoral researcher **Jarmo Pulkkinen** has conducted a study for the AI Ecosystem for Social and Health Services (SOTE) on the challenges and recommended actions for AI implementation in public healthcare and social services (wellbeing services counties, HUS Group, and the City of Helsinki). The study was conducted pro bono.

The research data was collected through **an online survey from November to December 2024**. The survey included both quantitative (46 challenges) and qualitative open-ended questions.

The results help develop responsible and effective AI implementation in public social and healthcare services by identifying areas for improvement.

Responses were received from **17 wellbeing services counties, the HUS Group, and the City of Helsinki**. Additional responses came from businesses, research institutions, organizations, associations, and government agencies (82 respondents in total).
A substantial amount of open-ended responses were received.
A scientific article based on the survey data will be co-authored in 2025.



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# Survey Phases and Timeline

**1. Analysis of potential challenges from previous research**

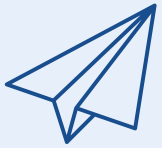
October 2024

**2. Email survey to approximately 20 experts**

October 2024

**3. Implementation of online survey form and feedback round for test version**

November 2024



**4. Survey invitation sent to SOTE AI ecosystem registry, approx. 900 recipients**

November 2024

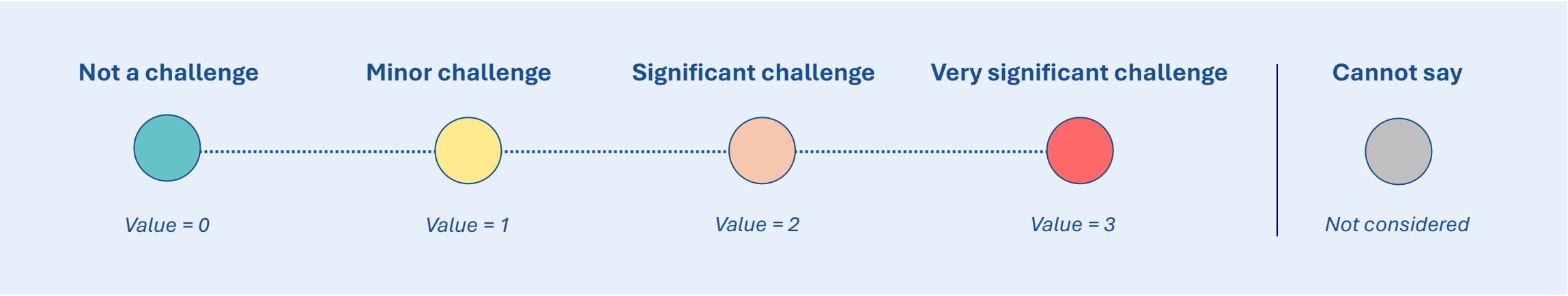
46 potential challenges were identified based on these (structured questions)

The survey was open until December 31, 2024

Valuable feedback was received during the online survey design phase. Thanks to: Ministry of Social Affairs and Health, THL, University of Lapland, City of Rovaniemi, and multiple wellbeing services counties, NHG, Gofore, 2M-it, Business Turku

”How would you assess the following
**technological** **organizational** **environmental**
challenges in AI development for social and healthcare services
in wellbeing services counties, HUS, or Helsinki?”

**Total of 46 challenges** Open-ended responses were also possible



# Information about Respondents

**Participating Wellbeing Services Counties**

| In which organization do you work? | Responses | % |
|---|---|---|
| Wellbeing services county | 32 | 39% |
| Private software provider or consulting firm | 13 | 16% |
| University or public research institute | 9 | 11% |
| HUS group | 8 | 10% |
| Private healthcare service provider | 5 | 6% |
| Association or union | 4 | 5% |
| Other private companies | 3 | 4% |
| Ministry or government agency | 2 | 2% |
| Other | 2 | 2% |
| Other non-profit organizations (e.g. municipality, foundation) | 2 | 2% |
| City of Helsinki | 1 | 1% |
| Private research institute | 1 | 1% |
| **Total** | **82** | **100%** |

# Data

**Quantitative data**

- Structured responses with a 4-point Likert scale
- 82 individual respondents
- 3,490 individual challenge assessments, respondents evaluated 93% of statements

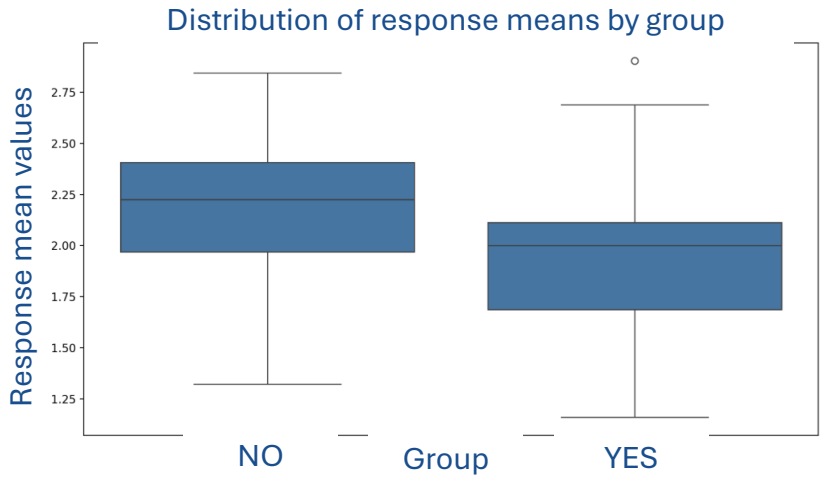
**Qualitative data**

- Consisted of open-ended question responses
- Contained 4,150 words, approximately 33,000 characters
- Open responses were expert-level and high quality

# 2. Results

# Key Findings

**1. Implementers assess challenges as lower**
Organizations that have implemented AI solutions in healthcare (about 50% of respondents) assessed challenges at a lower level compared to non-implementers, showing a statistically significant difference (p = 0.018)




**2. Challenges are perceived as significant**
Challenges were rated as significant on average (mean 2.0). All 46 predetermined potential structured challenges received at least 1.6 as mean value (on a scale 0-3) > Digitalization advancement appears as a complex systemic phenomenon also regarding AI

**3. Challenges are more organizational than technical on average**

**4. Solutions to challenges were offered abundantly in open responses**



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# Most significant challenges by mean value


**2,58** OR: Financial resources

**2,45** TE: Technical AI expertise in healthcare organizations

**2,40** OR: Availability of AI experts in healthcare organizations

**2,37** TE: AI solutions' compatibility with public healthcare

**2,35** OR: Staff time resources for AI implementation and training

**2,34** OR: Change management in processes and projects

**2,29** OR: Management and decision-maker understanding and support

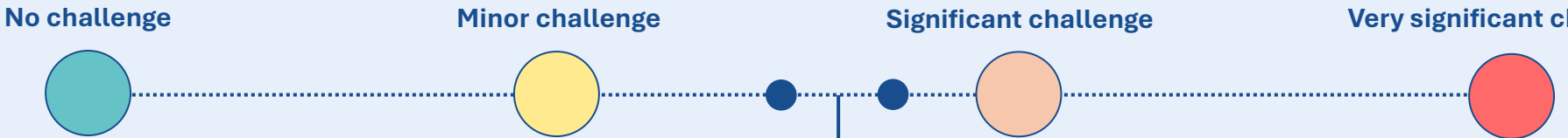
**2,29** OR: Application of legislation in healthcare organizations

**2,27** TO: Availability of AI experts in workforce

**2,25** TO: National AI funding

(OR = Organizational, TE = Technical, TO = Operating environment)

# Least significant challenges by mean value




**1,65** TE: Availability or sufficiency of digital data (e.g. patient/client records)

**1,66** TE: AI solutions' compatibility with various patient/client cases

**1,69** TE: Awareness of AI solutions and applications in the market

**1,72** TE: AI solutions' suitability for public healthcare

**1,74** TO: Citizens' readiness to use AI-based solutions

**1,74** TE: Trust in cloud-based AI solutions

**1,78** OR: Staff resistance to change regarding AI

**1,79** TO: Development of AI strategy

**1,81** TO: Citizens' trust in AI-assisted healthcare services

**1,86** TO: Restrictions in procurement and acquisition legislation

(OR = Organizational, TE = Technical, TO = Operating environment)

# Mean Challenge Scores

1,94

**Mean - Technical Challenges**

2,16

**Mean - Organizational Challenges**

2,02

**Mean - Operating Environment Challenges**



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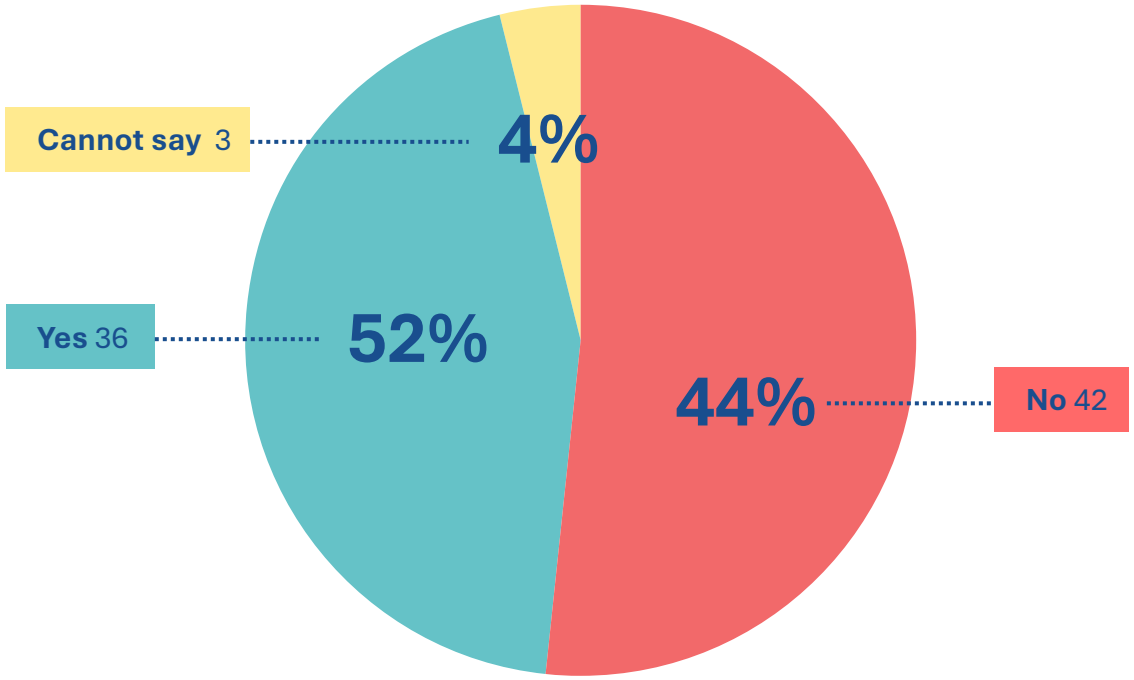
# Half of respondents had been implementing; generative AI most common

**Have you been implementing AI solutions in public sector (wellbeing services county, HUS or Helsinki) healthcare services?**




| | |
|---|---|
| Language models | 29 |
| Natural language processing | 15 |
| Machine learning | 17 |
| Image recognition | 7 |
| Data mining | 10 |
| Combined solutions | 11 |

About 2/3 of respondents from wellbeing services counties, HUS, or Helsinki had been implementing AI solutions

# Observations from results

1. **Legislation and EU AI Act placed surprisingly in the middle of challenges**
   *"I believe legislation will eventually become a significant challenge, once we get clearer national interpretations and operational guidelines. For example, the AI Act will become quite concrete once its practices and processes are established and functional."*

2. **Availability or sufficiency of digital data surprisingly rated as the lowest challenge**

3. **Relatively few experts responded, despite good geographical coverage**
   AI implementation in public healthcare organizations involves pilot projects and individual initiatives.
   Part responded as a collective response: *"Next week we'll gather with a larger group to discuss AI based on this survey and after that share our 'consensus response' "*

# 3. Recommendations

# Recommendations based on open responses

## 1 National level recommendations

### 1.1 Strengthening national coordination

- Create a national AI strategy and guidelines for the healthcare sector
- Ensure consistent interpretations in legislation application

*"Nationally (led by Finnish Institute for Health and Welfare or other) should create whisper or similar training for specific target groups. It's a completely unnecessary waste of money if this is done independently in different regions. This is, however, quite fundamental, so many other AI solutions can be thought to follow this development path. Such a project would also advance companies' operations in Finland."*

### 1.2 Securing funding and resources

- Develop a long-term funding model for AI projects
- Coordinate national development projects
- Train AI experts

*"Savings and health benefits based on biological age should be achieved as quickly as possible, so AI could be developed peacefully without additional harm that waiting for causes"*

### 1.3 Clarifying legislation and guidelines

- Harmonize data protection law interpretations
- Develop Findata service

*"Need to clarify primary and secondary use of data for AI solutions linked to client and patient work. Also need clear objectives for benefits separate from, e.g., previous solutions that might include GDPR issues, like the previous year's Health Benefit Assessment decision from the Institute."*

# Recommendations based on open responses

## 2 Healthcare organization level recommendations

### 2.1 Strategic development

- Integrate AI as part of the organization's overall architecture
- Create a long-term development plan

*"Adequate resourcing, management, and pioneers at all levels support and act according to shared strategy. Increase systematic nature of development work and create long-term plans“*

### 2.2 Competence development

- Create a systematic training model based on the current state assessment
- Recruit or purchase AI expertise for the organization

*"Expert understanding of the organization, including management. National trainings where more practical examples. Your webinars are good but should penetrate more into organizations and have such How do I do it - type lectures"*

### 2.3 Strengthening change management

- Involve staff in development work
- Strengthen communication and support

*"Involving staff from the project start would help build a positive atmosphere. Similarly, clear service promises with users and schedules would help. Regular situational reviews and celebrations with staff during development projects enable validating and giving feedback to committed staff better and removes unnecessary fears when they start seeing new system's benefits in their work."*

# Recommendations based on open responses

## 3 Employee level recommendations

### 3.1 Competence development

- Strengthen AI literacy
- Adopt continuous learning principles

*"Training. Both mandatory digital and technology modules to be added to basic training, and specialized studies aimed at development work that provide better readiness to create and coordinate it"*

### 3.2 Mapping practical experience

- Participate in AI pilots and experiments
- Utilize peer learning between individuals and teams

*"Training, experiments, and sharing experiences... The challenges are often pre-training, uncertainty, and fear of new. Technology is everywhere now, from buying groceries to enabling safety monitoring for the elderly."*

### 3.3 Developing change readiness

- Active participation in development work
- Open attitude toward new ways of working

*"Involving employees already in the development phase and needs assessment. Joint reflection on how AI helps practical work"*

# Successful implementation of recommendations requires commitment and collaboration at all levels

**Especially important are:**

**1. Strengthening national coordination**

**2. Ensuring adequate resources**

**3. Systematic competence development**

**4. Supporting change management**

**5. Strengthening individual employee readiness**

# For more information

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