



Overview of Habitat Innovation Project

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- 1996 Join Systems Development Lab., Hitachi, Ltd.
Research on “access control for enterprise information system”
- 1998 Research on PKI system for Japanese government,
Research on CORBA security service
- 1999 Joint-research on CORBA security service
with startup in Boston (~2001)
- 2001 Back to Japan. Research on PKI system for mobile service.
Standardization of security in ITU-T SG17 (~2014)
- 2004 Research on dynamic VPN system/service
- 2011 Research on cybersecurity for ICS, **smart grid security in Hawaii**
- 2014 Manager of social infrastructure system dept. (power, rail, water, and so on)
- 2015 Manger of security research dept.
- 2018 Join Hibitat innovation PJ**
- 2019 Senior manager. **Join Smart city PJ of WEF C4IR as Hitachi fellow (~2023)**
- 2020 Distinguished researcher
- 2023 Leader of habitat innovation PJ**



1. What is Habitat Innovation Project?

◆ Mission: "Habitat Innovation" to realize "Society 5.0"

We aim to realize "Society 5.0" through innovations in "Habitat (human settlements)" based on an approach that integrates "manufacturing (engineering and technology development)" with "urban development (development of suitable land and social design)".

★ Co-creation by industry and academia



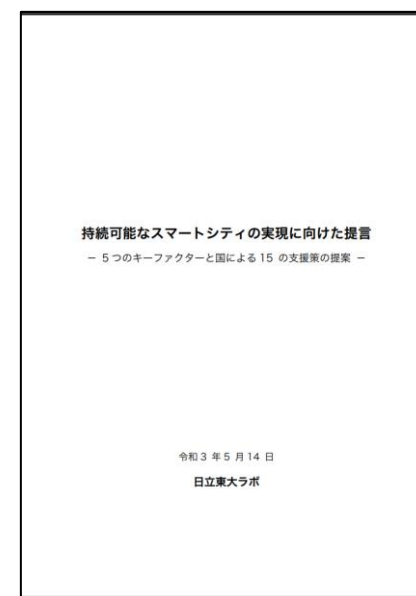
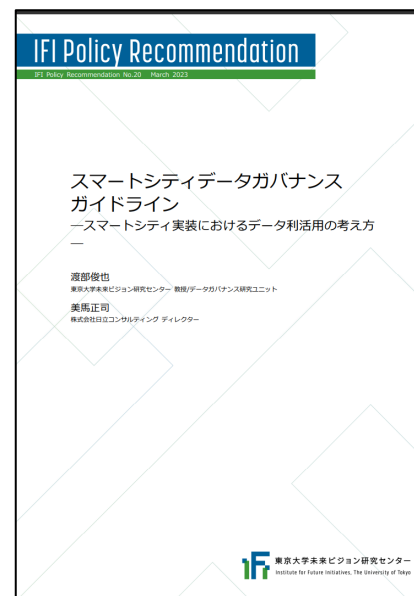
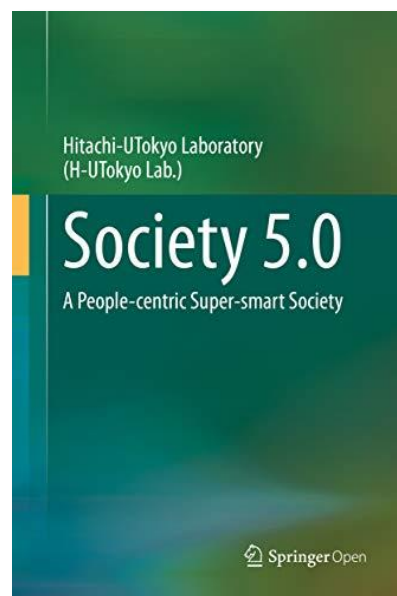
June 20, 2016 Establishment of H-UTokyo Lab

◆ Project goal (Building "Society 5.0" Vision)

Vision of a future city aiming to improve "Human security and well-being"

Reference solutions that solve social issues to implement "Society 5.0"

Business model based on synergistic effects of our strengths



What should do to build sustainable & well-being smart city ?

Opposition of new technologies and services

Effectiveness of the measures is unclear

Data utilization is not progressing

Lack of citizen involvement

Concern about reputation damage

Lack of leader/specialist for smart city





① Social acceptance

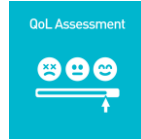
Refers to the local community's deepening of understanding of smart-city measures, including methods for collecting personal information, and its autonomous acceptance of decision-making-related measures.
<H-UTokyo Lab.-related material>

- "Basic Principles of Social Acceptance"



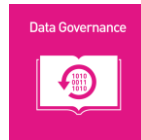
② Participation of residents

A mechanism for the participation of residents is critical for a smart city that supports the community. This system enables creation of new services together with residents by comprehending the challenges and needs of the community.



③ Smart-city QoL evaluation

If the goal is a people-centered smart city, residents' QoL should be the yardstick for evaluating smart-city measures. Evaluation should be conducted from people-centered perspective of how much richer residents' lives have become.



④ Data governance

Besides complying with the Act on the Protection of Personal Information, new control measures for concerns such as privacy and AI ethics are needed when using data. Governance related to data handling is a necessity.

<H-UTokyo Lab.-related material>

- "Smart-city Data Governance Guidelines"



⑤ Data infrastructure ecosystem

Data collected in a smart city is a community resource that can generate new business in the area. Exchanging and utilizing data across departments is therefore critical for smart-city sustainability.



⑥ Human resource development

Developing HR in the unprecedented field of smart city by preparing education programs and career plans is also critical for sustainable smart-city growth.

<H-UTokyo Lab.-related material>

- "Smart-city School, Graduate School of Frontier Sciences, The University of Tokyo"

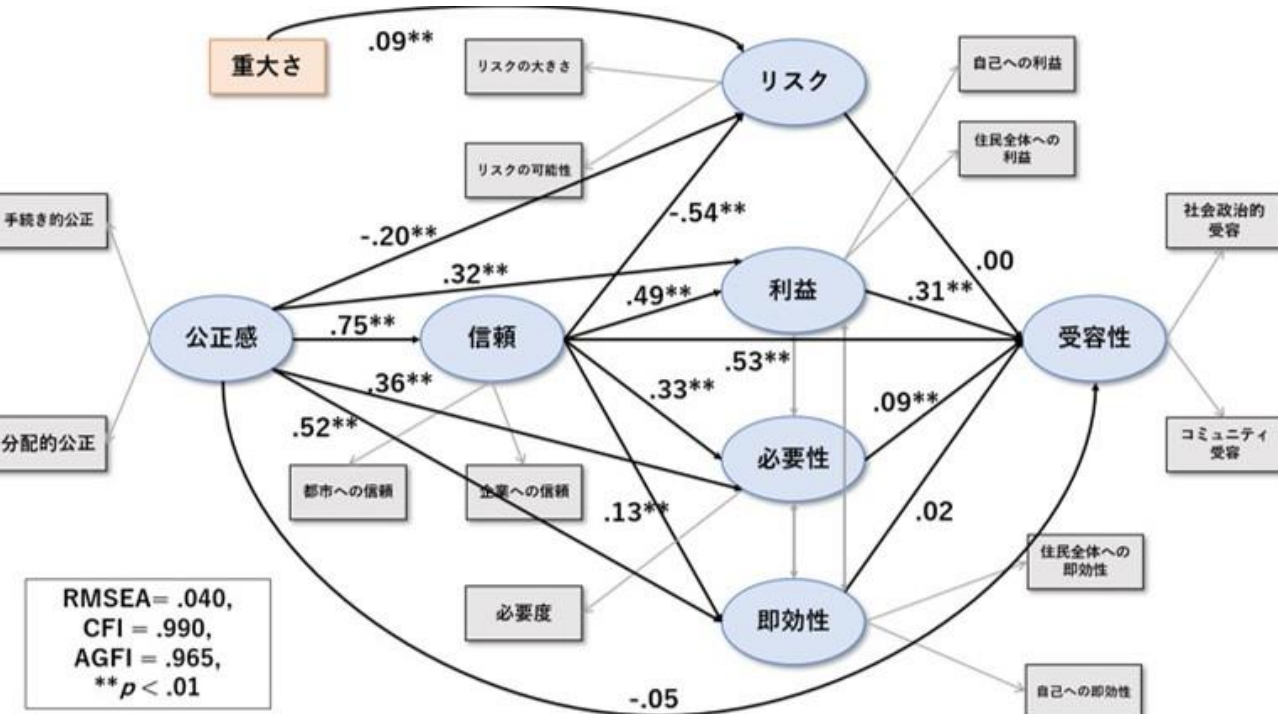
<H-UTokyo Lab.-related materials common to all factors>

- H-UTokyo Lab. ed., "Architecture of Society 5.0: Balancing Human-Centered Design and Sustainability" (tentative title, in preparation)
- [H-UTokyo Lab. online seminar "Architecture for Society 5.0: Balancing Human-Centered Design and Sustainability"](#)

Issue: Severe backlash risks when installing new technologies in cities

Goal: To build an assessment tool/case book of the social acceptance

Approach: Case studies on processes and factors affecting local communities in acceptance based on psychological and behavioral economics researches



Model for social acceptance of technology implementation

The impact factors on social acceptance are,
Trust > Benefit > Necessity



It means that followings might be promising measures

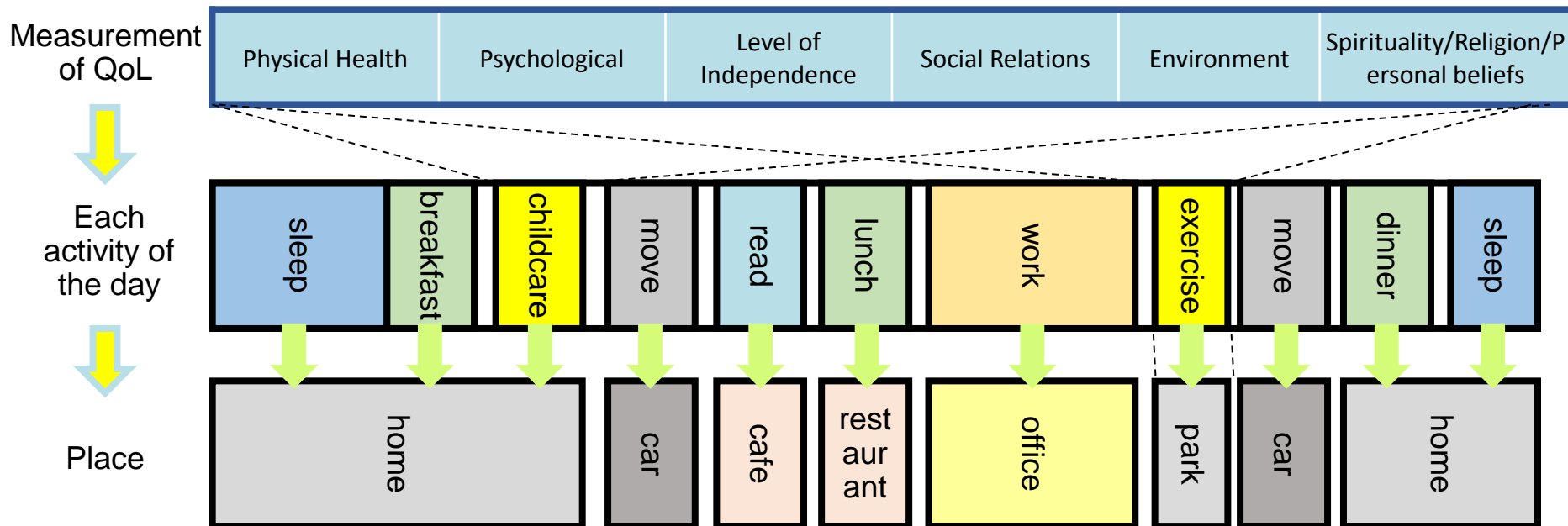
- Continuous building of trust relationship like dialogue with citizens, enhancing transparency, and so on.
- Conveying benefit of new services

Issue: Most urban evaluation methods use environmental physical quantities and lack a human perspective.

Goal: To develop a city assessment tool based on Quality of Life (QoL) concept

Approach: Measuring your QoL and satisfaction with each activity of the day

Framework of measuring Activity based QoL

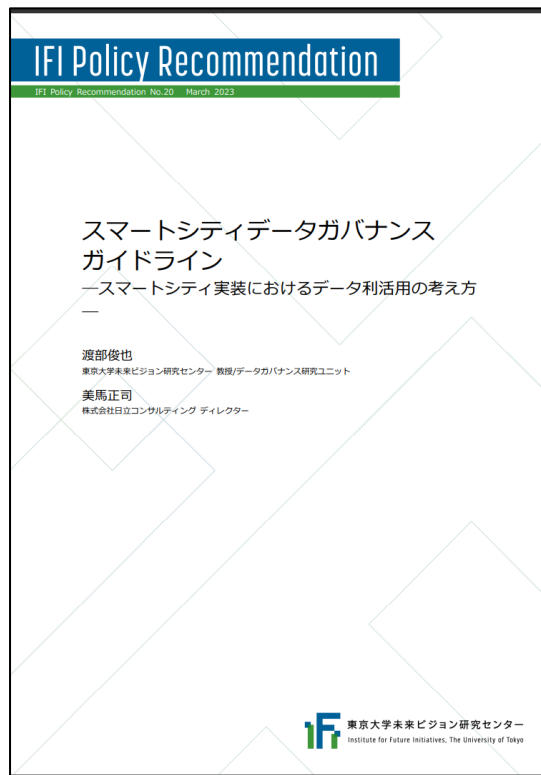


The total quality of life of an individual is the value of the place where the action was taken.

Issue: Reputation risks when utilizing personal data in cities

Goal: To build a data management system to control the appropriate use of data based on rules to handle smart city data

Approach: Studies existing documents about smart cities, minimizing and reflect our knowledge retrieving through field works/trials



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https://ifi.u-tokyo.ac.jp/wp/wp-content/uploads/2023/03/policy_recommendation_dg_20230324j.pdf

Process of data governance

**Habitat Innovation PJ in Hitachi U-Tokyo Lab.
aims to realize “Society 5.0 ” through innovations in
“Habitat (human settlements).”**

- **Propose six key factors as societal infrastructure**
- **Produce guidelines (data governance, smart city implementation process, and so on.)**