# Sustainable Transportation: A Tool for Implementing Healthy City

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## Ⅰ. Background

Lately, Japan is confronted with issues of relocation of convenient facilities to the suburbs and discontinuance of public transportation in local cities. Increased automobile use accompanying these is exacerbating environmental problems. Moreover, a health problem has emerged by which too much dependence on automobile use increases the risk of developing the symptoms of lifestyle-related diseases such as obesity, diabetes, and cancer. To resolve these difficulties, it is considered necessary to encourage the utilization rate of sustainable transportation including environmentally friendly automobiles.

## Ⅱ. Objectives

We propose new policies for implementing the reconciliation of promotion of sustainable transportation and healthy city, using people's willingness for health promotion related to food and exercise in this study.

## Ⅲ. Break-through points

This study analyzes the relation between health and sustainable transportation with additional information related to the food environment, such as food facilities and eating habits for the first time. This study furthermore performs proposals large cities with a matured public transportation system, as well as local cities that are highly dependent on automobiles a new viewpoint to encourage behavior contributing to improvement in health conditions and solutions to environmental problems by introducing the viewpoint of environmental protection and the IoT technologies.

## Ⅳ. Methods

### Analytical methods

①quantification method II analysis
②covariance structure model analysis

### Analytical Data

①WEB Questionnaire
②geographic information
- ✓ status of transportation facilities
- ✓ status of food facilities
- ✓ population and density

## Ⅴ. research outline

### Research object

①Research Method WEB Questionnaire
②Implementation Period 2016.2.15th～2.21th
③Number of surveys distributed 500 samples
④Number of surveys collected 469samples

**Respondent**:20 plus adult

**Area**: Tokyo 23 area & Ibaraki prefecture

### Main research subject

①Body Mass Index(BMI) & Self-healthy awareness(HRQOL)
②personal attribute
③social capital
④dwelling environment
⑤Daily routine-food environment

### Evaluation standard

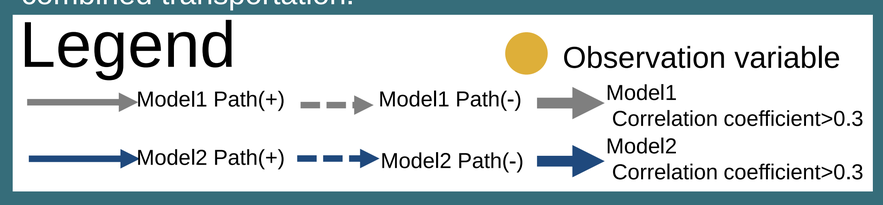
Using health index numbers

## Ⅵ. Results

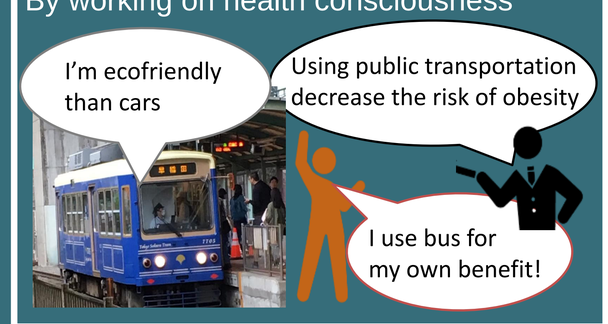
Regarding the relation of health conditions with the food environment and regional environment, factors that might contribute to improvement in health conditions include the development of
(1)public transportation and parks,
(2) increased density of food retail facilities, and population density,
(3) food retail facilities within a 10 minute from the place of residence,
(4) good eating habits and the non-automobile dependent lifestyle, and
(5) satisfaction of walking environments.

## Ⅶ. Conclusion

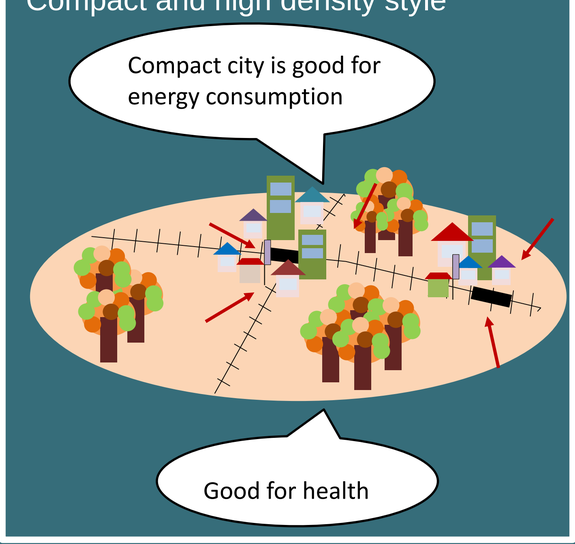
The following measures are proposed in this study with the findings described above for healthy city and sustainable combined transportation.



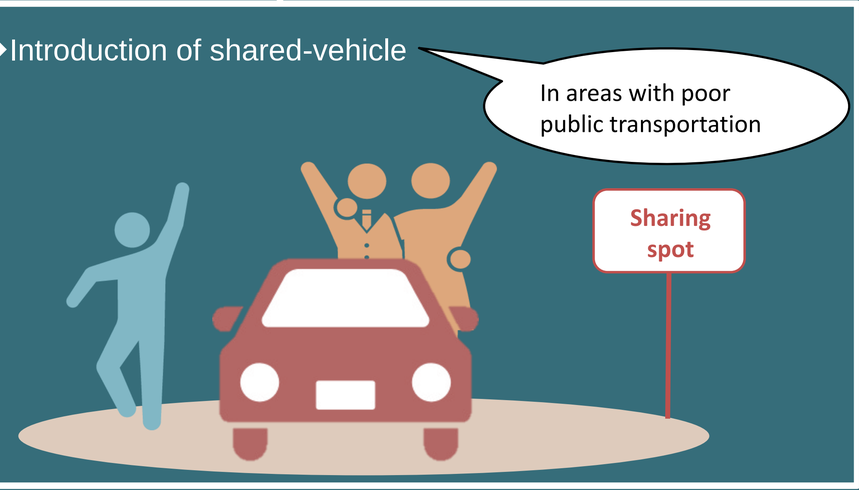

◆Promotion of using public transportation By working on health consciousness

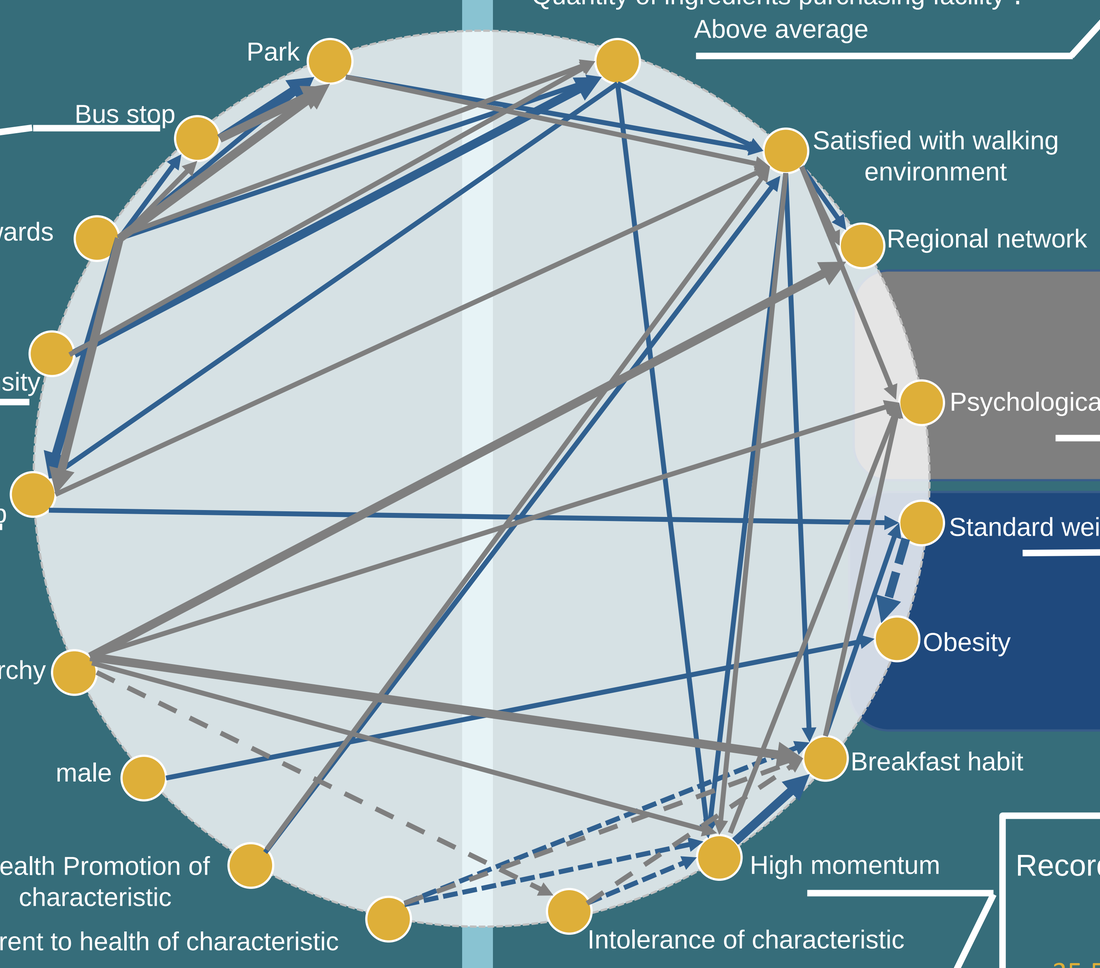



◆Conversion of urban structures to Compact and high density style




◆Introduction of shared-vehicle




◆Implementation of mobile catering and wagon retailing

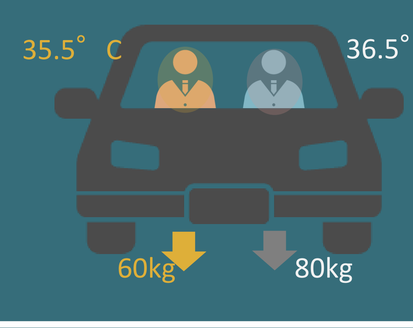
### BMI model①

| Compatibility of model① | | |
|---|---|---|
| GFI | AGFI | RMSEA |
| 0.94 | 0.92 | 0.049 |

### HRQOL model①

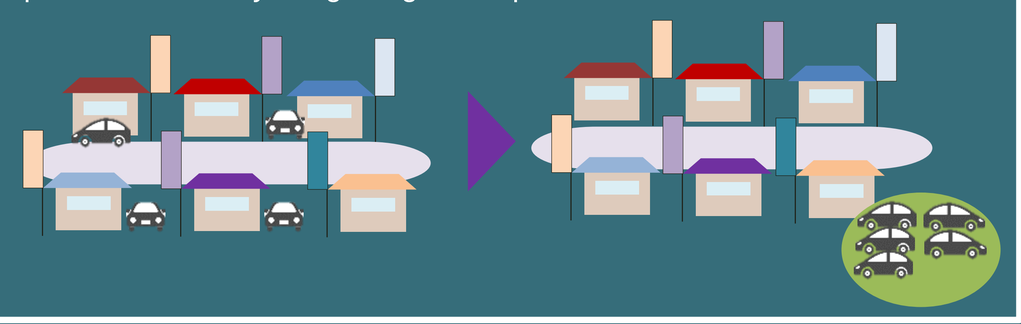
| Compatibility of model② | | |
|---|---|---|
| GFI | AGFI | RMSEA |
| 0.96 | 0.94 | 0.036 |

Recording the weight and body temperature of a driver and passengers by IoT




using big data ⇒recommend to visit hospital when something wrong

◆Conversion of urban structures to A low-carbon style suitable for pedestrian flow by integrating motor pools



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