

# Measuring subjective well-being from the commute

Patrick A. Singleton

patrick.singleton@pdx.edu

## 1 Background

### Subjective well-being (SWB)

- *Hedonic*: positive feelings, emotions, & mood
  - *Affective*: positive & negative emotions
  - *Cognitive*: overall satisfaction
- *Eudaimonic*: finding purpose or meaning, self-actualization

### Transportation and SWB

- Growing interest in transportation ↔ well-being
- Existing psychological instruments not appropriate or rarely applied to the travel domain or to a particular trip
- The Positive and Negative Affect Schedule (PANAS)
- The Satisfaction with Travel Scale (STS) used in Europe

### Research questions

- Can existing scales be used to measure travel SWB?
- Is STS a valid measure of hedonic SWB in a US context?
- Are there better ways to measure affective and (especially) eudaimonic SWB from travel?
- How does travel SWB vary across modes?

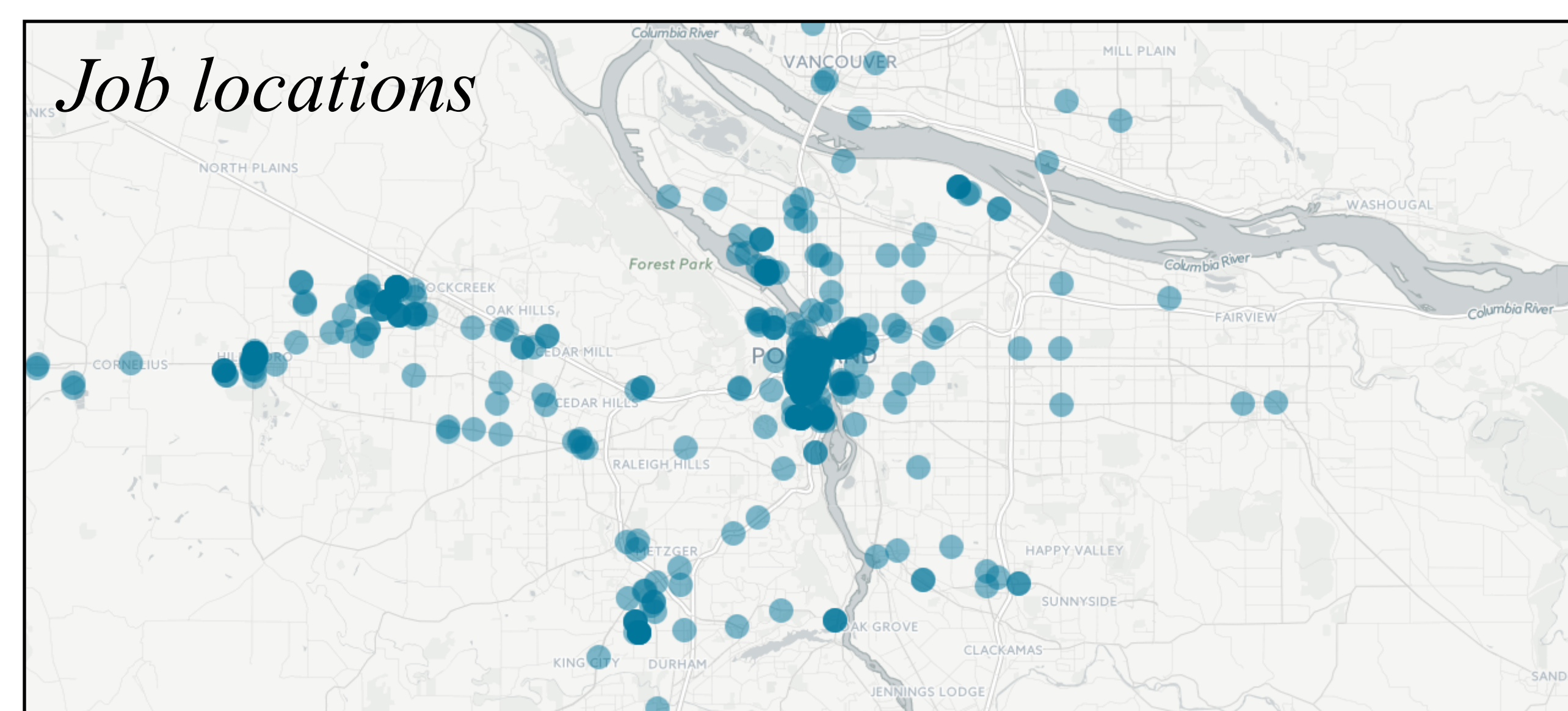
## 2 Data & methods

### Data

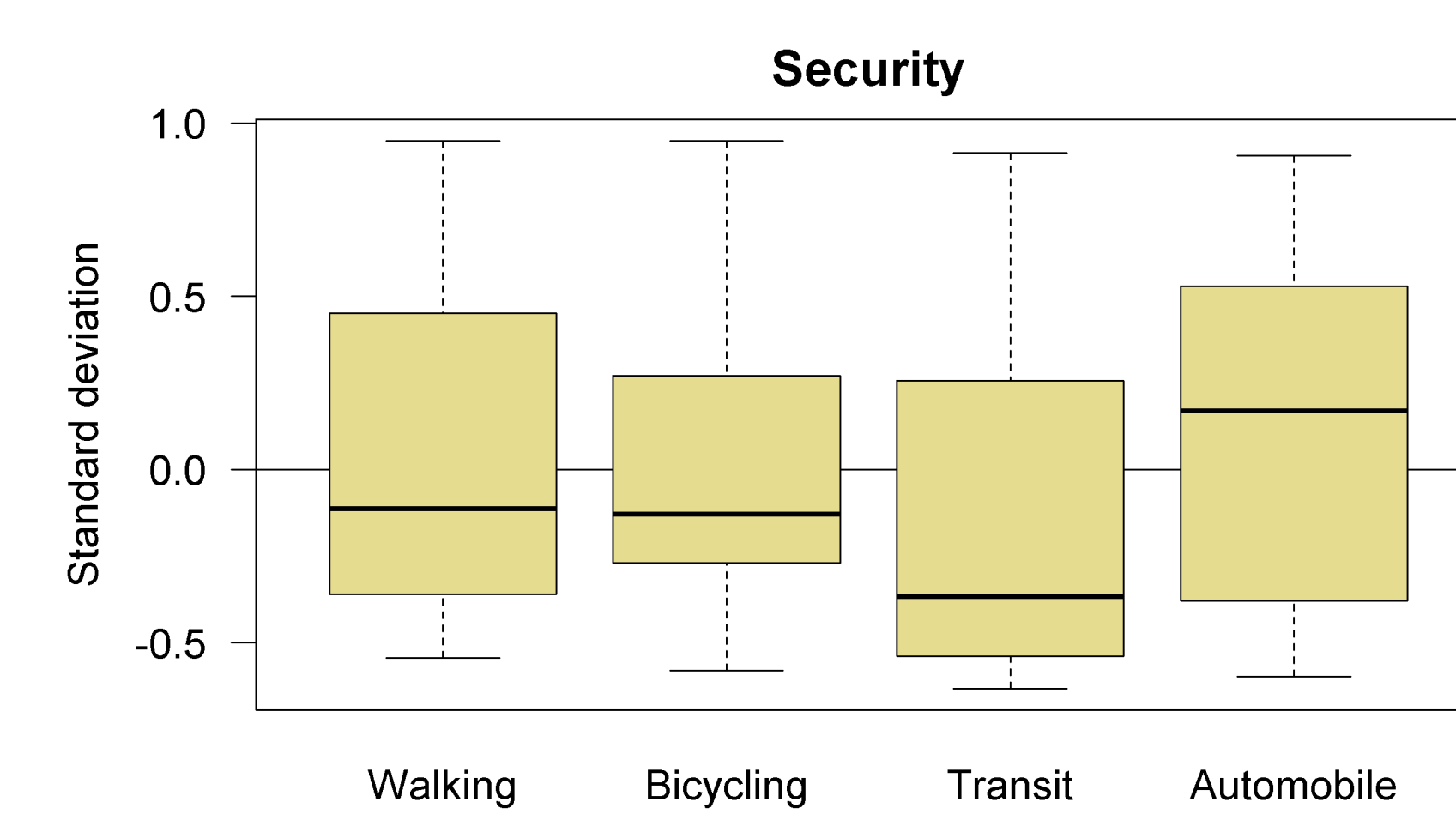
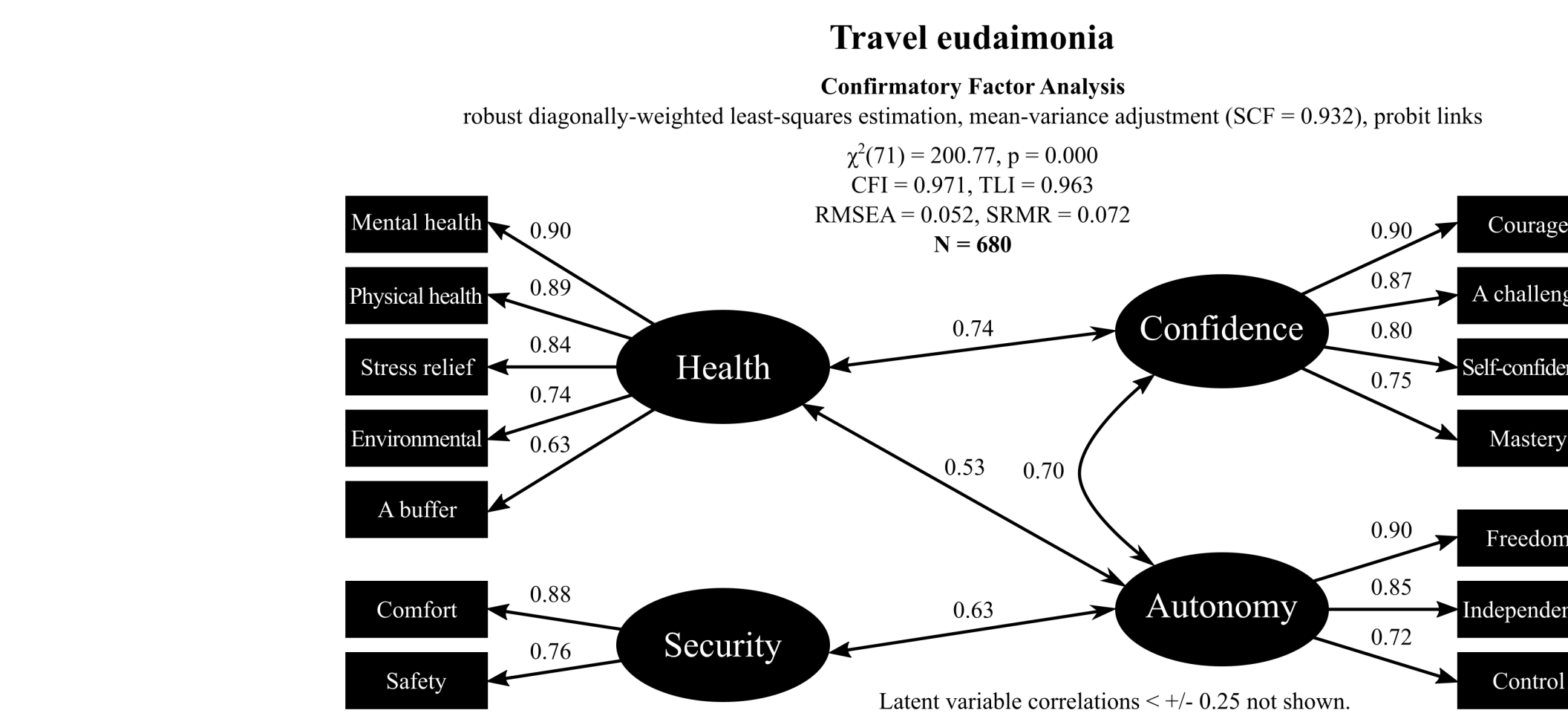
- Online questionnaire, travel diary
  - Typical & most recent commute info
  - Travel activities & travel experiences
- Open mid-October to mid-December, 2016
- ~ 650 commuters & most recent commutes to work

### Statistical analysis

- Exploratory factor analysis
  - Principal axis factoring, oblique oblimin rotation
- Confirmatory factor analysis

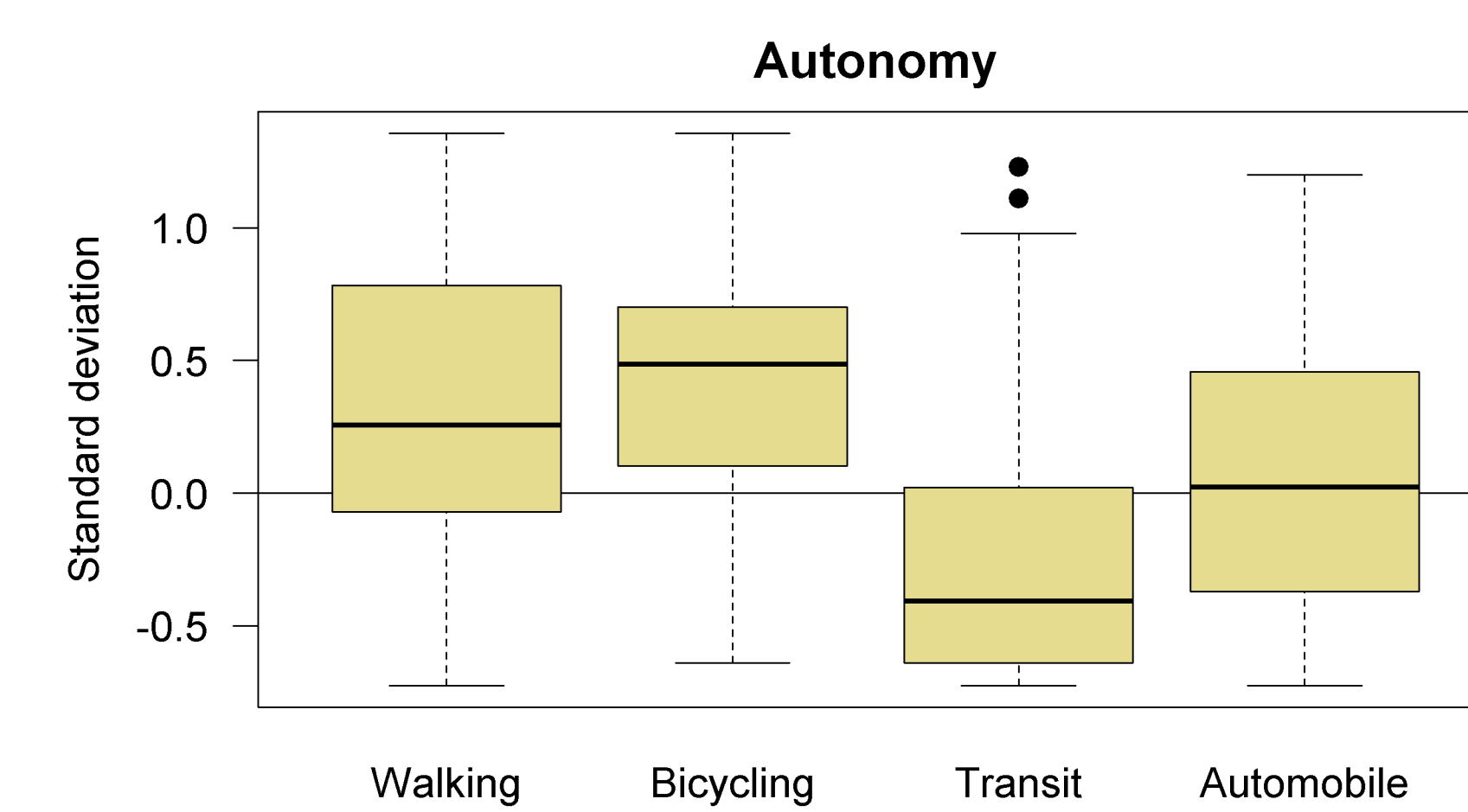


## 3 Travel eudaimonia



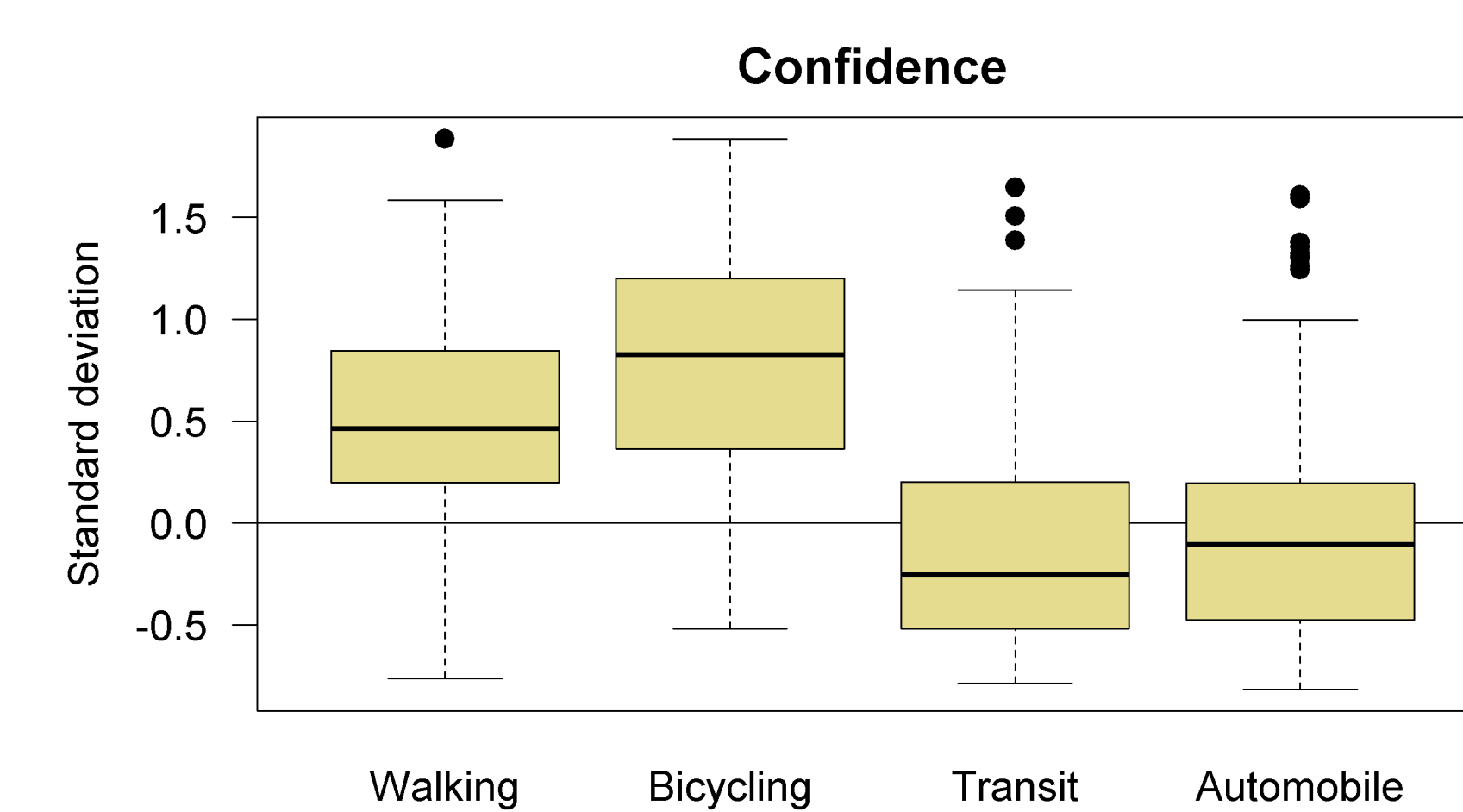
### Security

- Comfort
- Safety



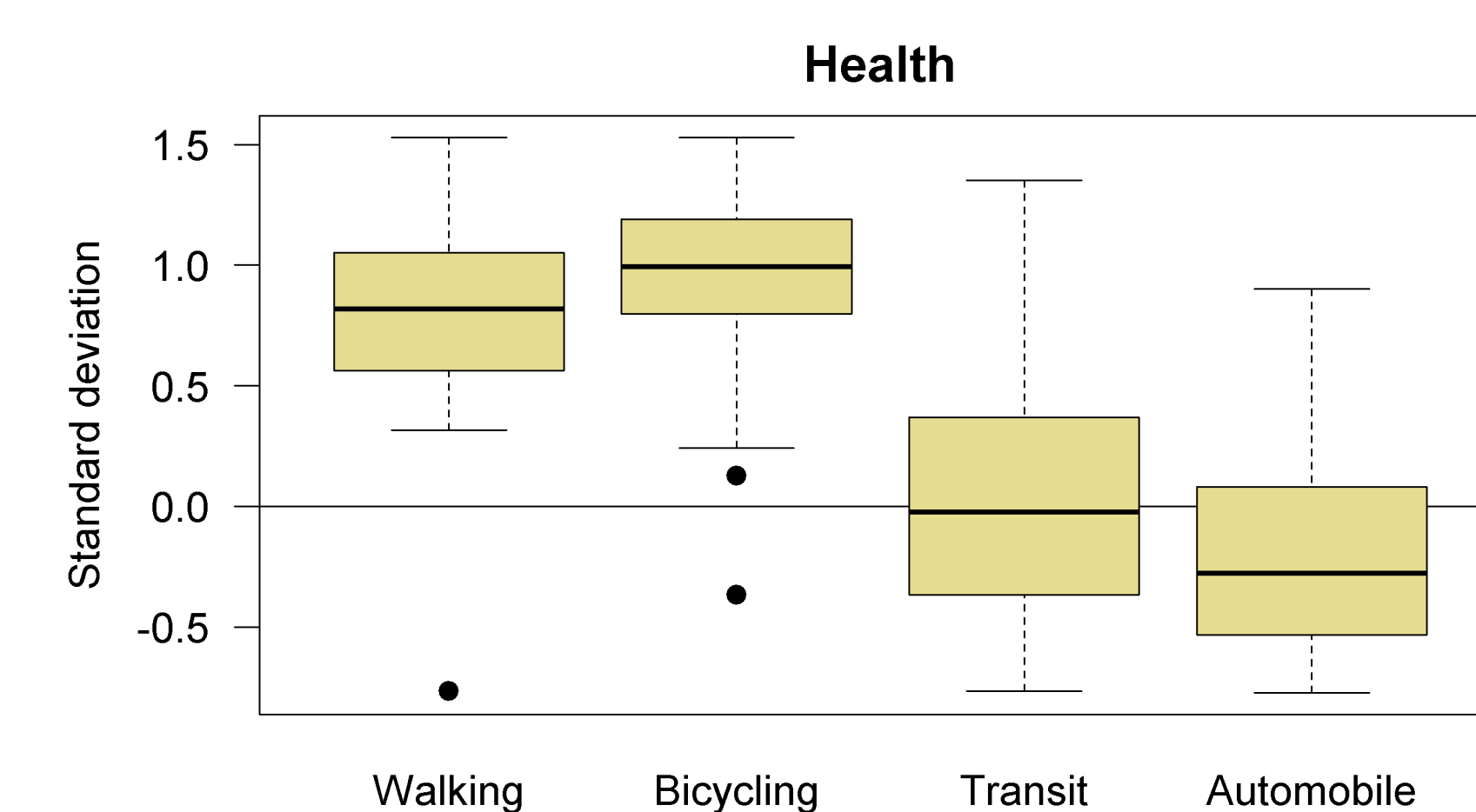
### Autonomy

- Freedom
- Independence
- Control



### Confidence

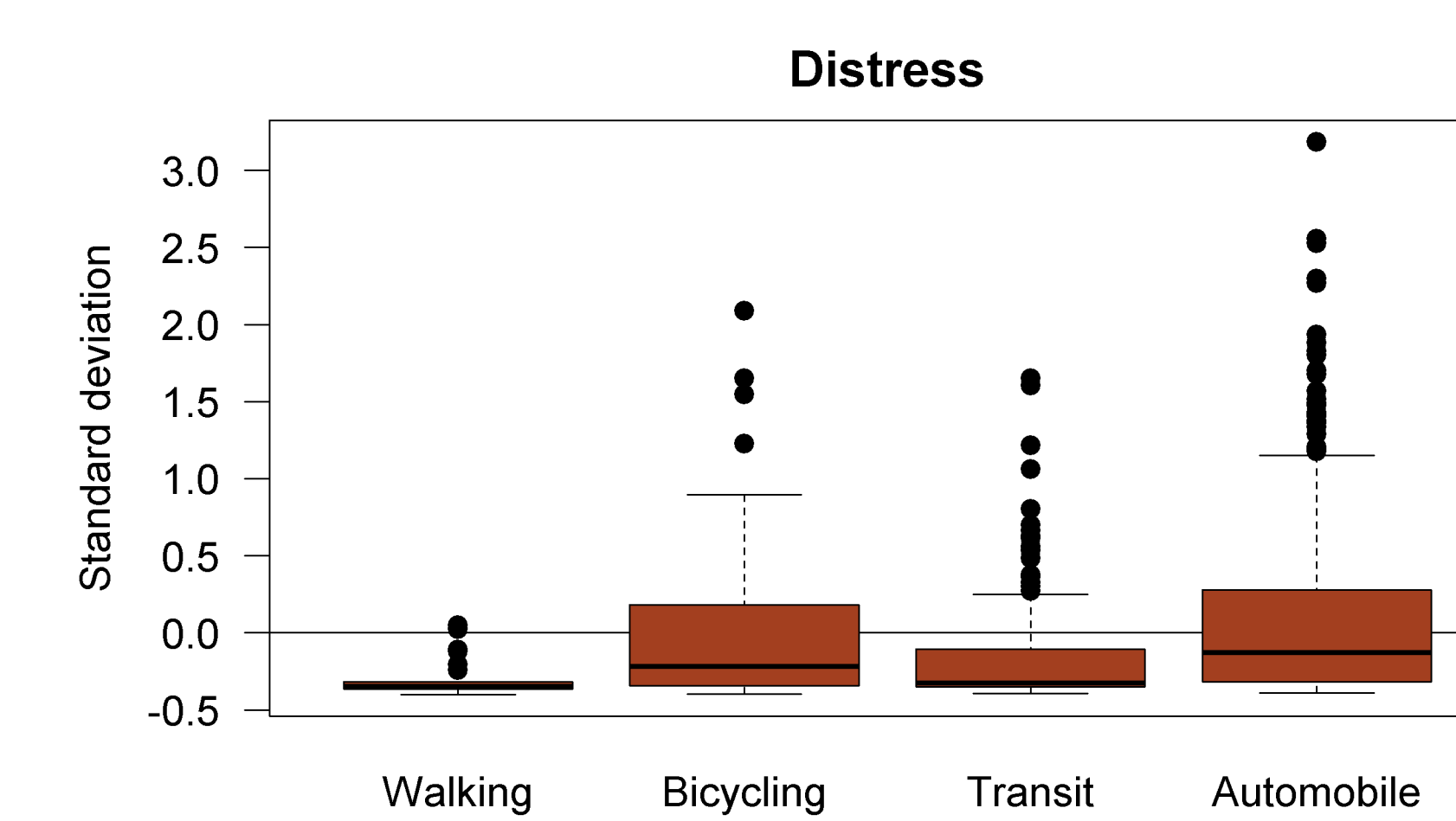
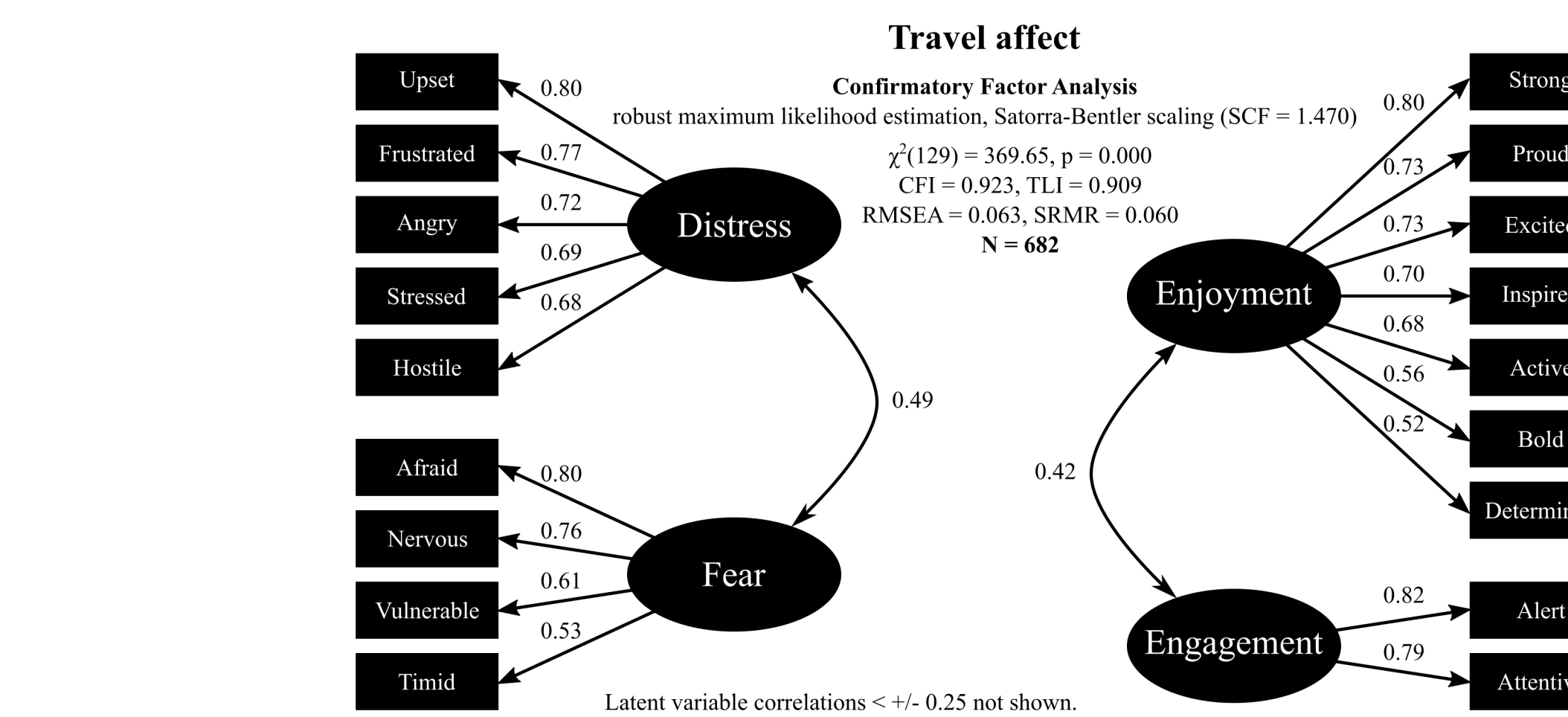
- Courage
- A challenge
- Self-confidence
- Mastery of a skill



### Health

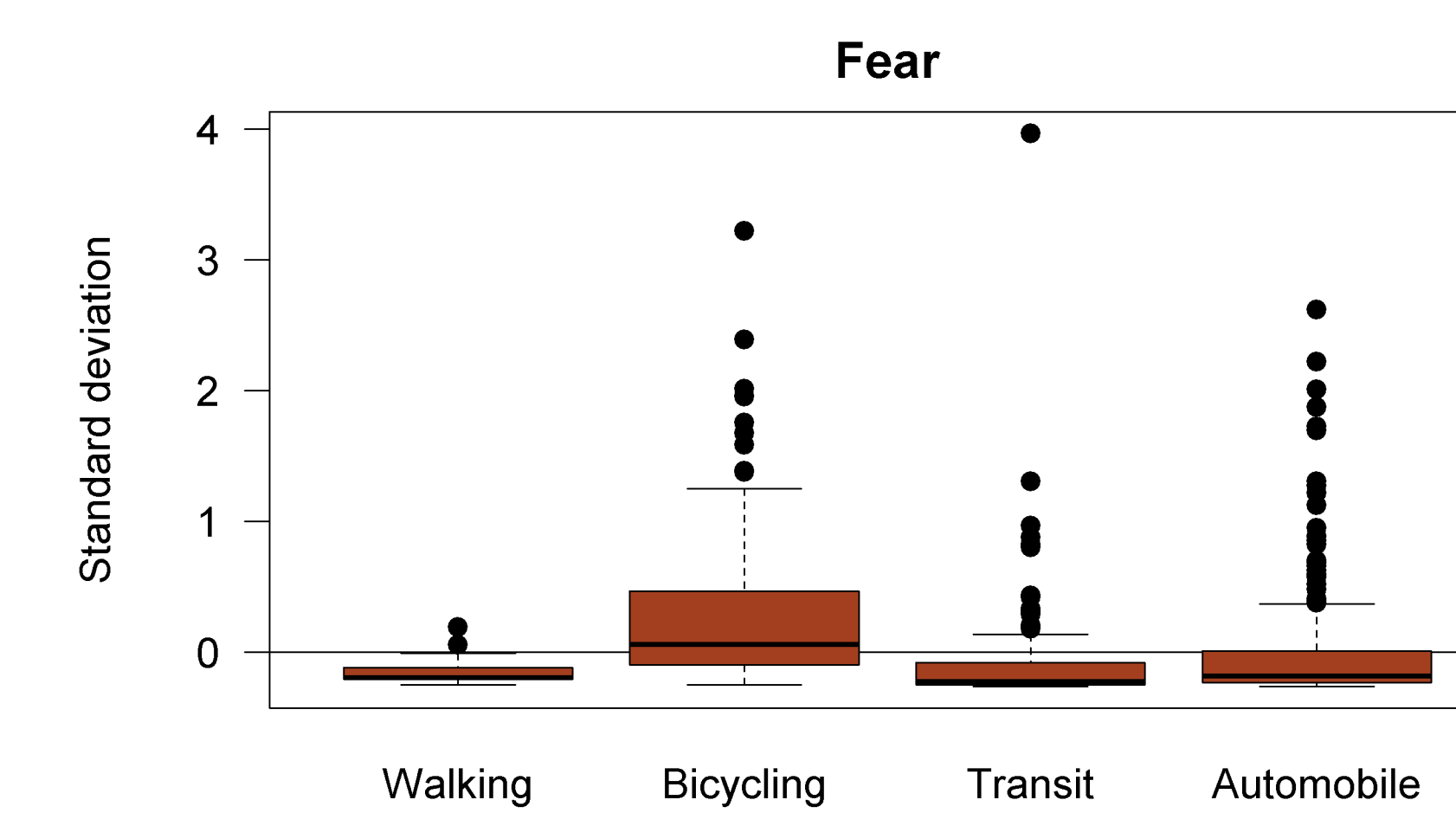
- Mental health
- Physical health
- Stress relief
- Environmental values
- A buffer btw. home and work

## 4 Travel affect



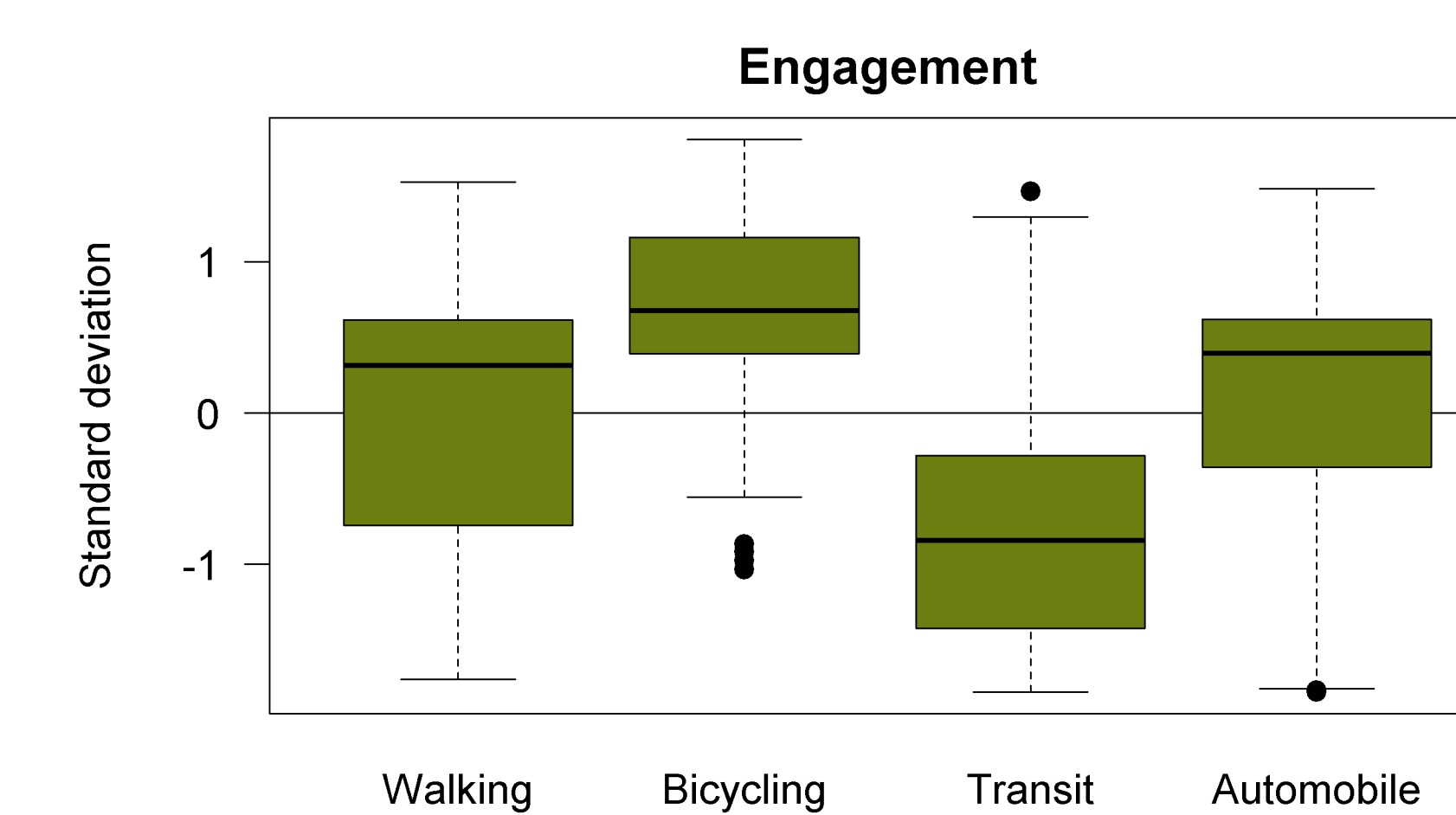
### Distress

- Upset
- Frustrated
- Angry
- Stressed
- Hostile



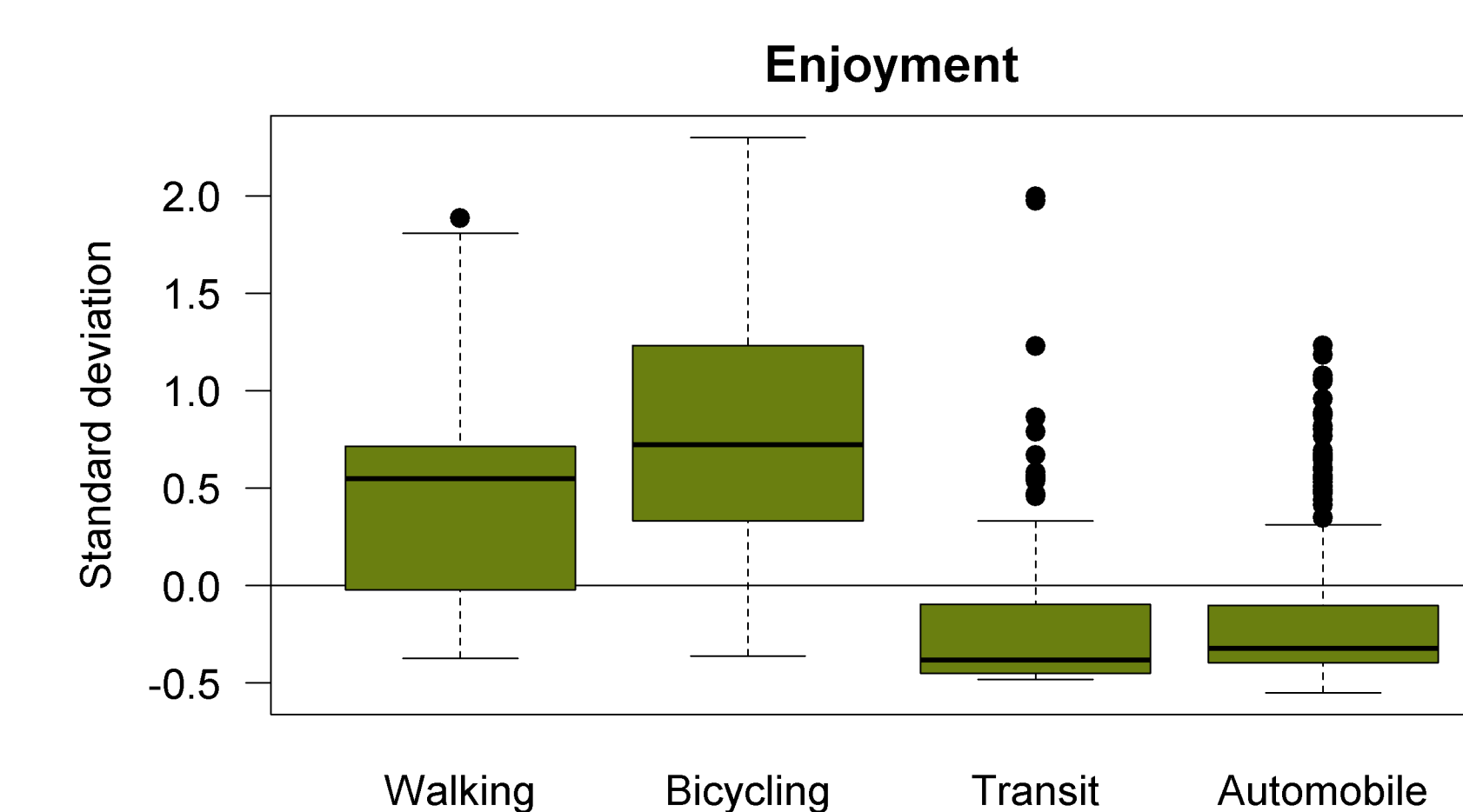
### Fear

- Nervous
- Afraid
- Vulnerable
- Timid



### Engagement

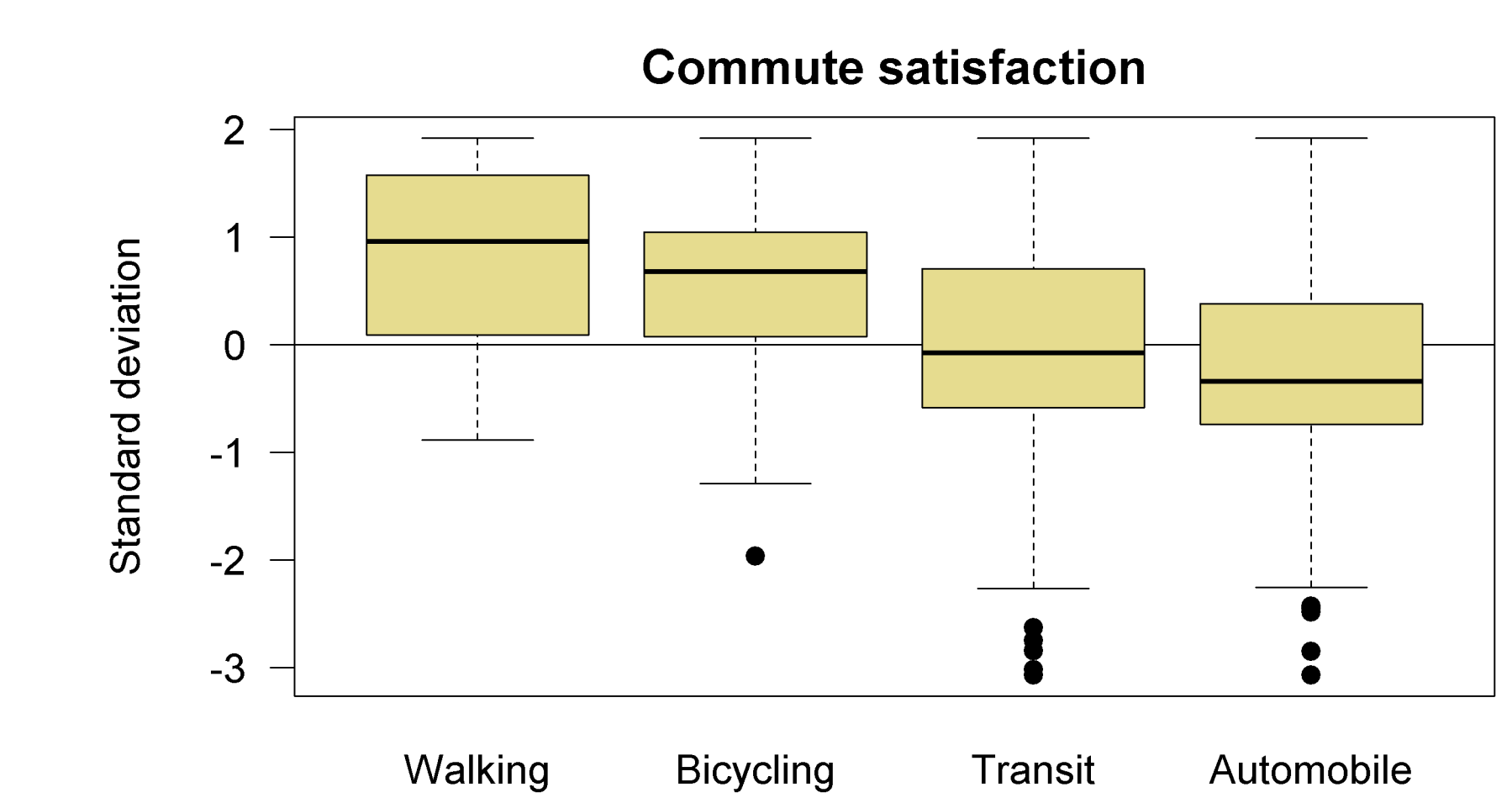
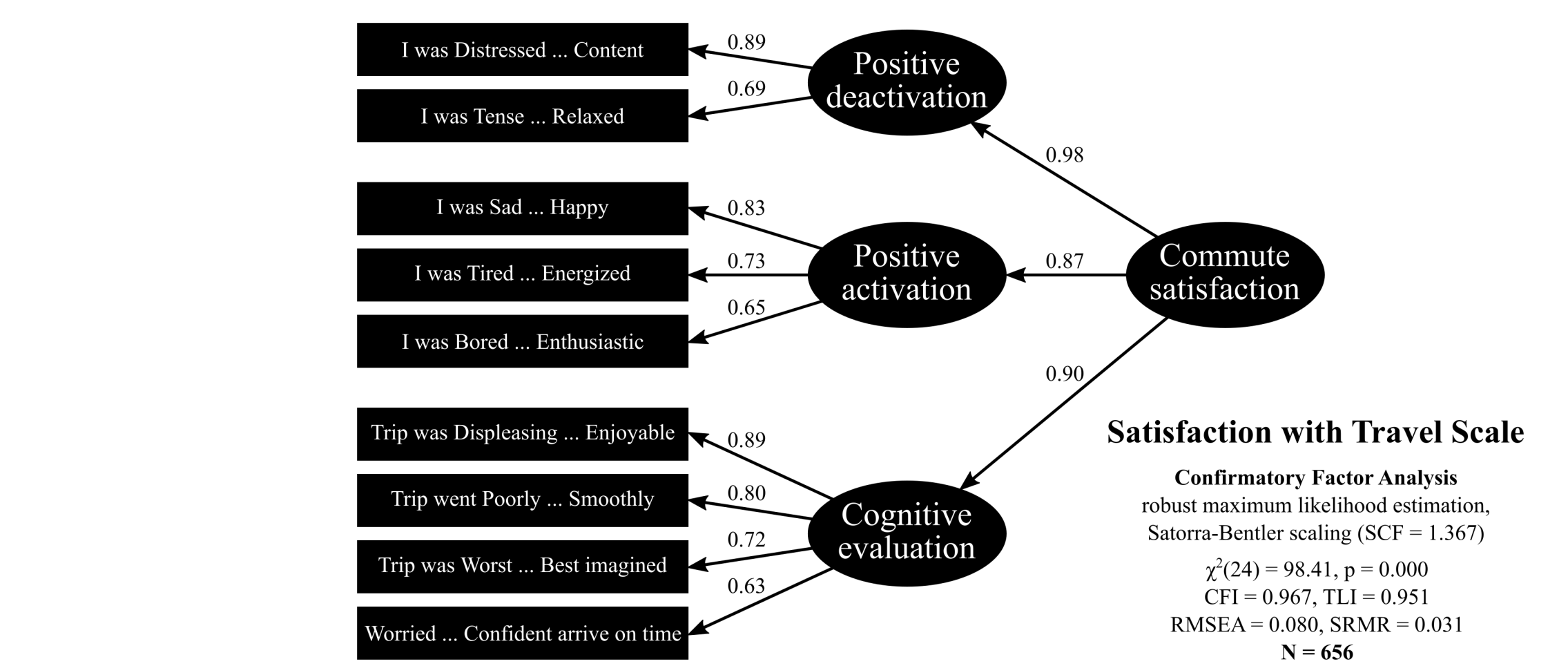
- Alert
- Attentive



### Enjoyment

- Strong
- Proud
- Excited
- Inspired
- Active
- Bold
- Determined

## 5 Satisfaction with travel scale



### The STS

- Positive deactivation
- Positive activation
- Cognitive evaluation

## 6 Contributions

### Measuring travel subjective-well-being

- Measuring travel eudaimonia is challenging but possible.
- Measuring travel affect using PANAS can be done, but with enhancements (more adjectives) specific to transportation.
- The STS is a valid and reliable measure of hedonic SWB.

### Understanding travel behavior

- *Operating* (bike, auto) vs. *non-operating* (walk, transit) modes:
  - Stresses of operating a vehicle in traffic.
- *More-active* (walk, bike) vs. *less-active* (transit, auto) modes:
  - Mental and physical health benefits of exercise.
- *Exposed* mode (bike): concerns over traffic safety.

### Acknowledgements

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