

Leisure time choice model based on past activity memory

member

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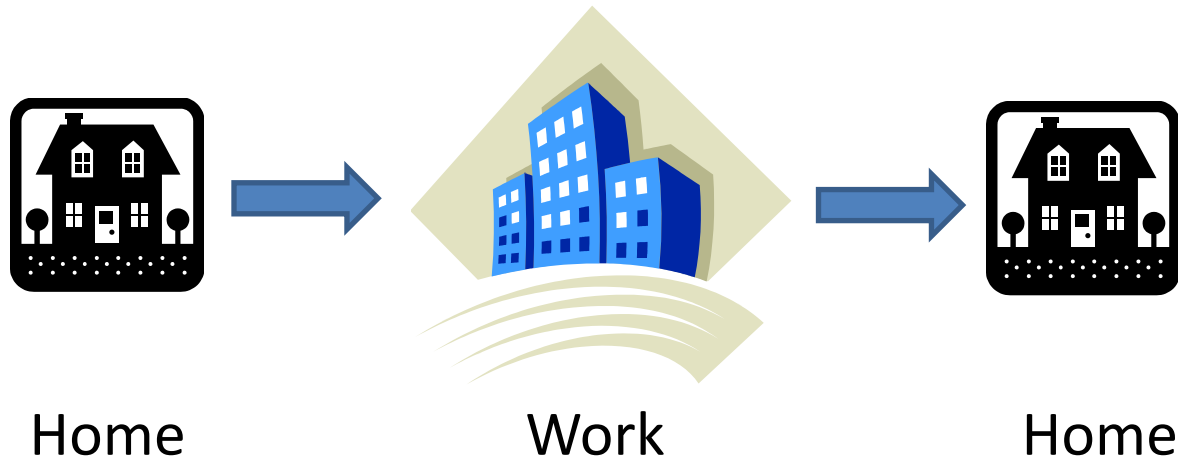
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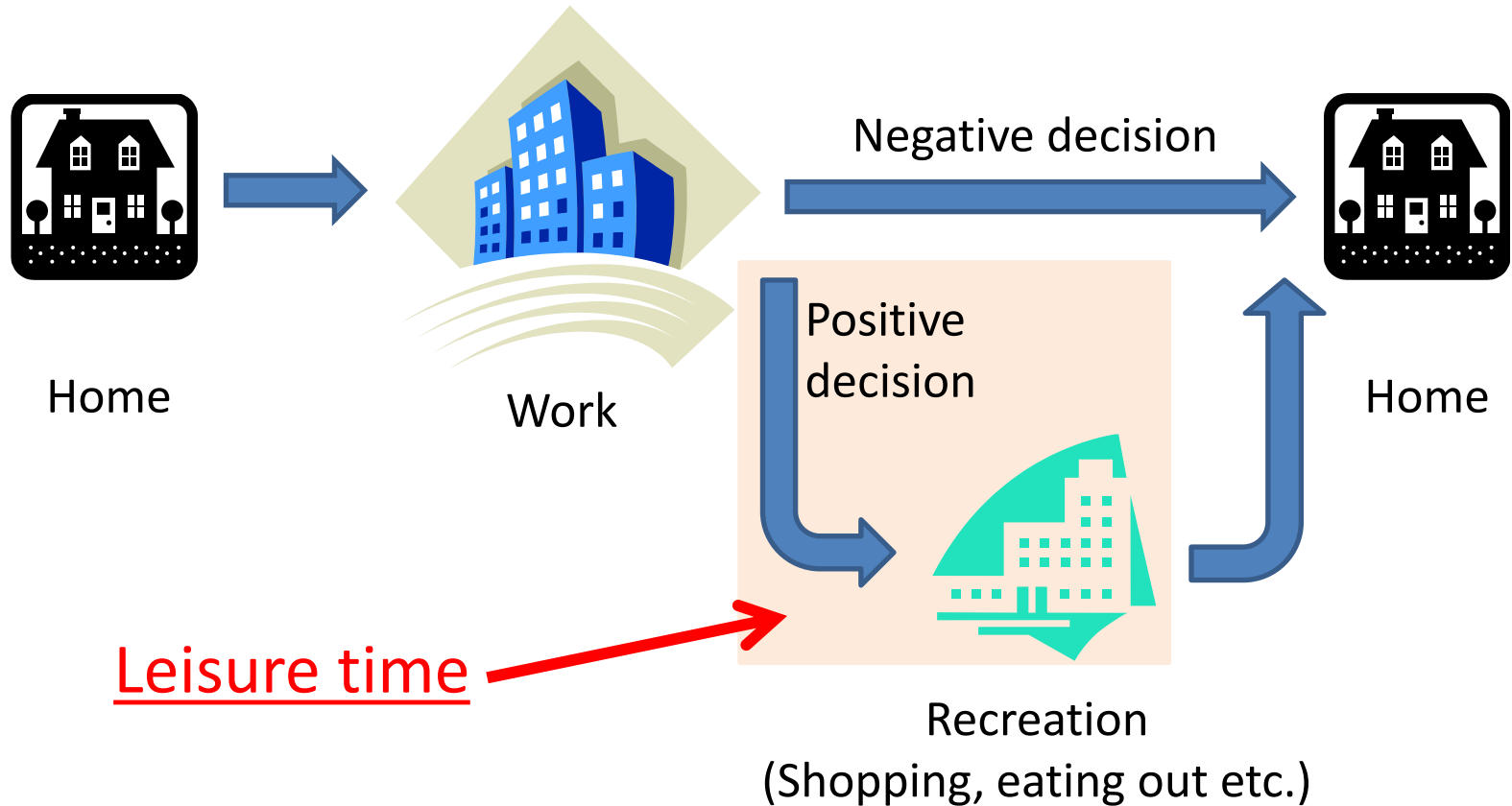
Background

- Normally weekday trips comprise of moving from home to the workplace in the morning and returning home in the evening.

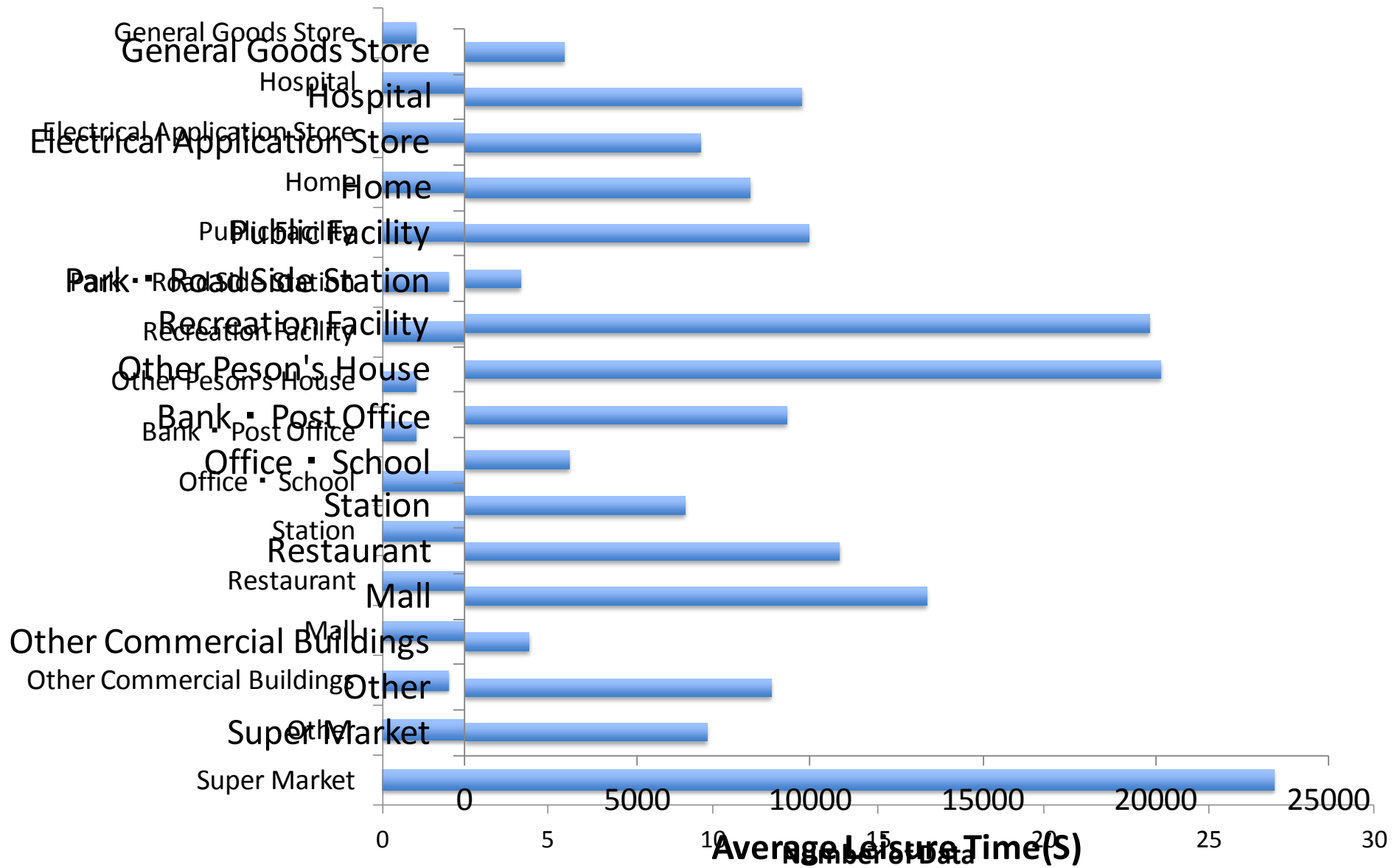


The Focusing Point

- But sometimes another destination is added in this chain

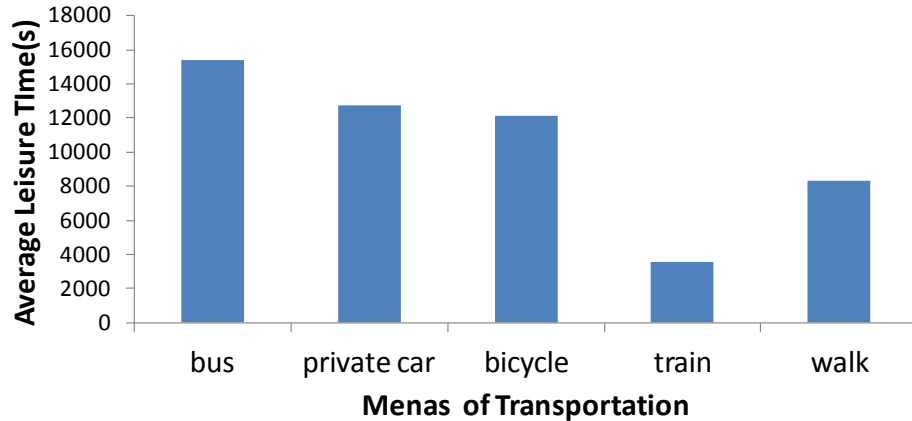


Elemental Analysis

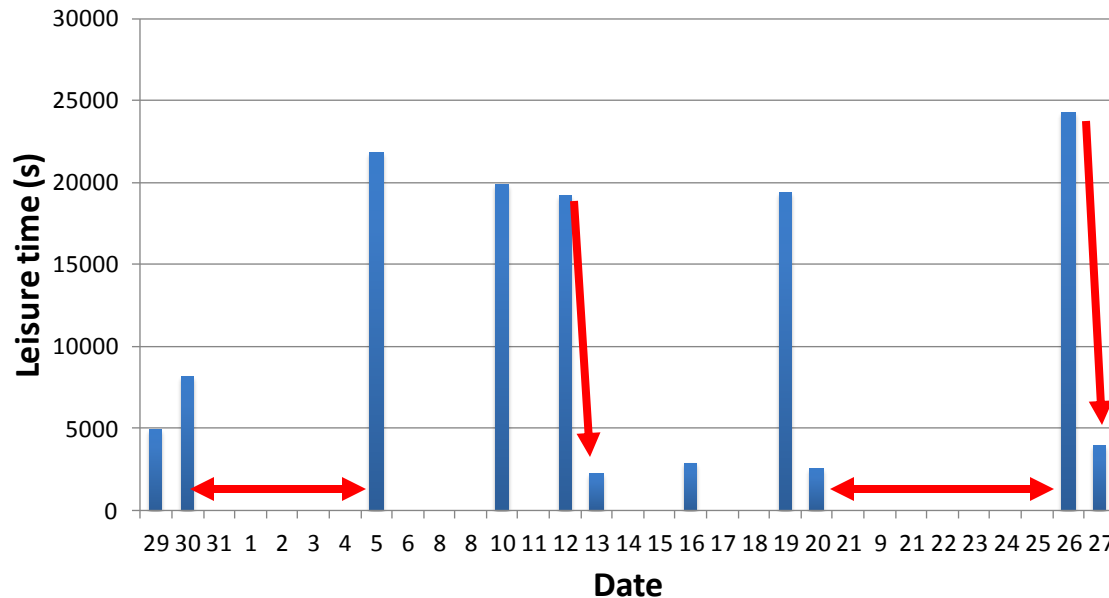


Elemental Analysis

What factors define the **leisure time** ?

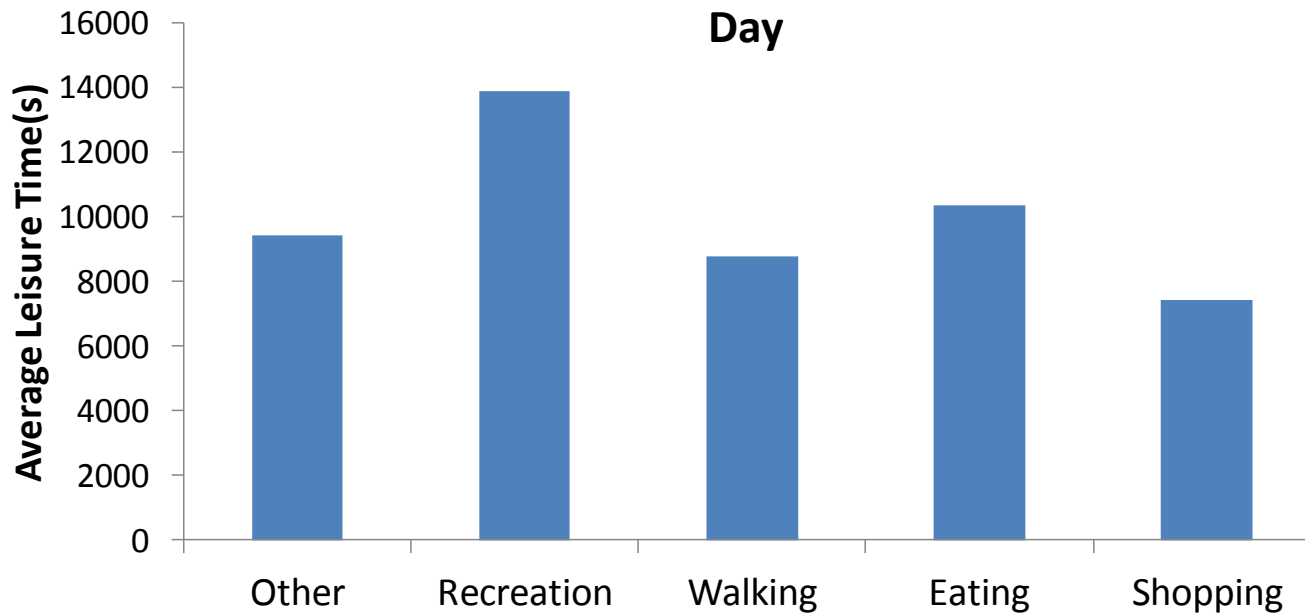
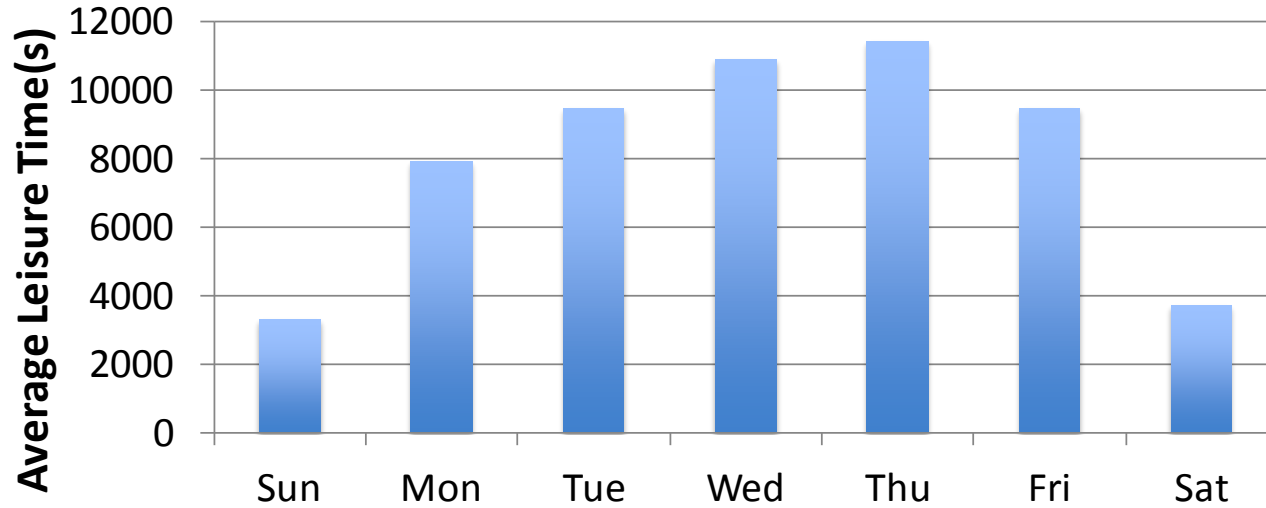


Means of Transportation



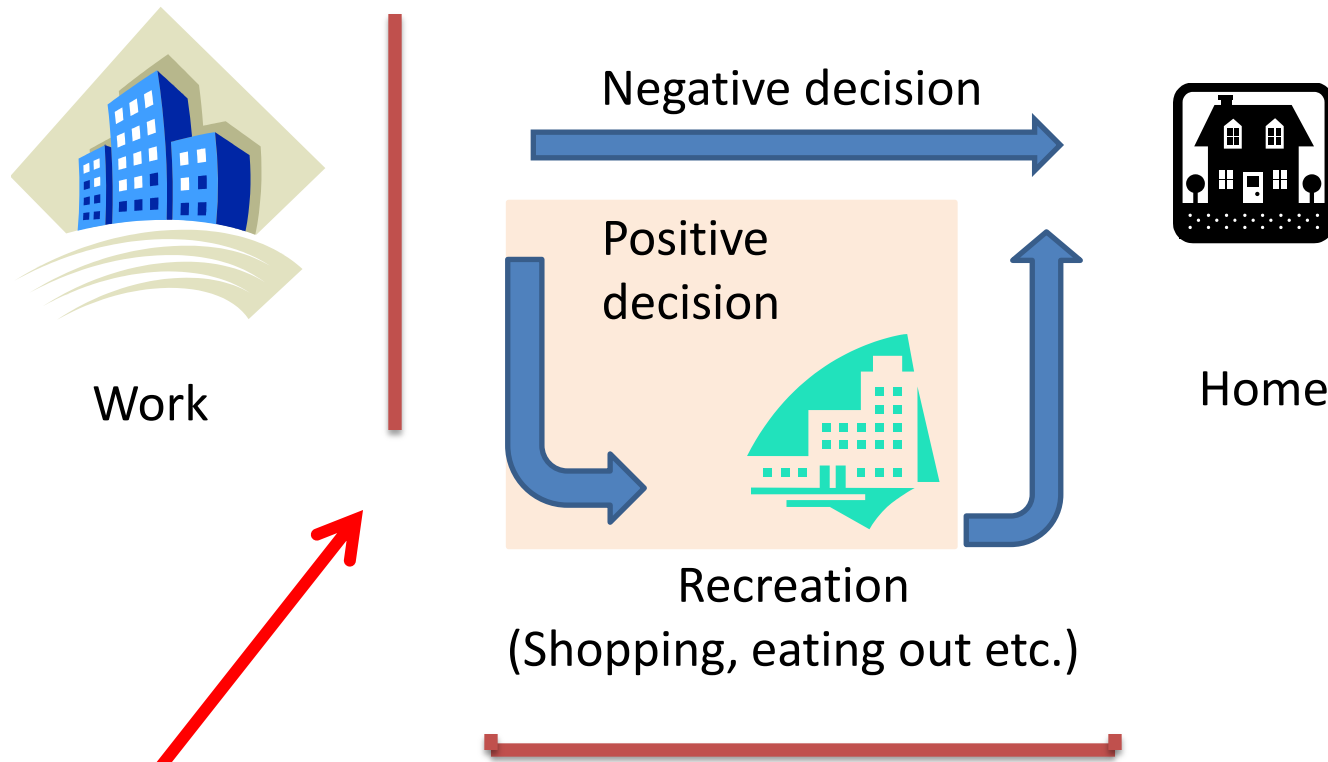
The past activity memory

Elemental Analysis



Many Factors are concerned with leisure time

Discrete and Continuous Choice



1. Decision making



Discrete choice

2. How long the leisure time



Continuous choice

Discrete-Continuous Model

Sample Selection Model

$$y_{discrete} = \begin{cases} 1 & \text{if } u_{discrete}^* > 0 \\ 0 & \text{if } u_{discrete}^* \leq 0 \end{cases} \quad \text{Decision making}$$

$$u_{discrete}^* = v_{discrete} + e_{discrete}$$

$$y_{continuous} = \begin{cases} v_{continuous} + e_{continuous} & \text{if } y_{discrete} = 1 \\ 0 & \text{if } y_{discrete} = 0 \end{cases}$$

Leisure time

Results of Estimation

	explanatory variable	parameter	t-value
discrete model	Constant term	-2.543	-17.99 **
	The day before a holiday	-0.594	-4.19 **
	The day following a holiday	-2.390	-12.46 **
	Days from previous leisure activity	-0.010	-1.06
	Consecutive working days	0.653	17.74 **
continuous model	constant term	3.407	32.56 **
	Days from previous leisure activity	0.150	10.95 **
	Consecutive working days	1.897	43.32 **
a correlation coefficient		0.840	20.11 **
The number of observations			737.00
Log likelihood at the initial value			-8667.69
Log likelihood at convergence			-2162.46
Adjusted McFadden's Rho-square			0.751
Adjusted Rho-square			0.749

The past activity memory make a impact to decision making in the day.