iCSC 2015 International Cycling Safety Conference

Analysis of Preferences for the Use of a Bicycling Sharing System in Athens

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Hannover, 16 September 2015

Objective-outline

Objective

The analysis of the parameters influencing the use of a bicycle sharing system in Athens

Methodological steps

- Literature review
- On-line survey
- Data processing
- Statistical analysis
- Results
- Conclusions
- Further research

Literature review

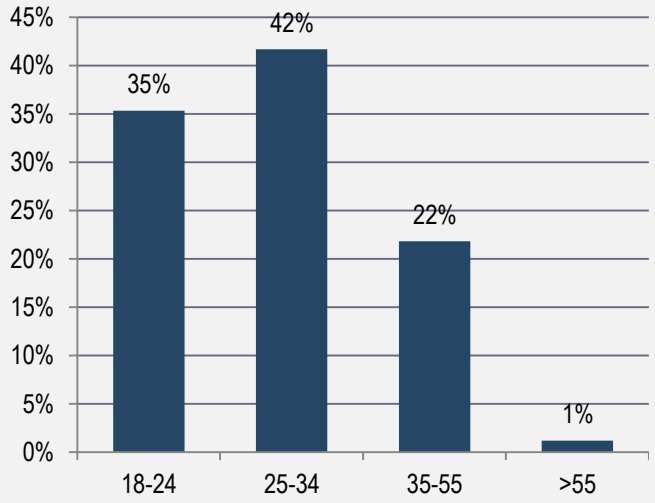
The ways that a BSS can benefit a modern city are (Bike-share Planning Guide, 2013):

- Reduction in the **level of congestion**, and air quality improvement
- Increased **accessibility**, to areas where otherwise would be difficult to approach
- Increased **convenience** in covering the distance from the stop/ station to the final destination
- Improvement of bicycle's **public image**
- An **alternative way of travelling** in the city by car or by public transport.
- **Healthier** individuals

On-line survey

- The on-line survey data were collected from a sample of **252** participants
- The **online survey** was spread via pages of social network, personal e-mail, and personal contact at central areas of the Municipality of Athens

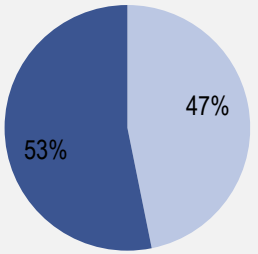
Age distribution



Sample criteria

- Goal-oriented
- Law of Inertia of Large Numbers
- Accurate representative of the universe
- Proportional
- Random selection

Gender distribution



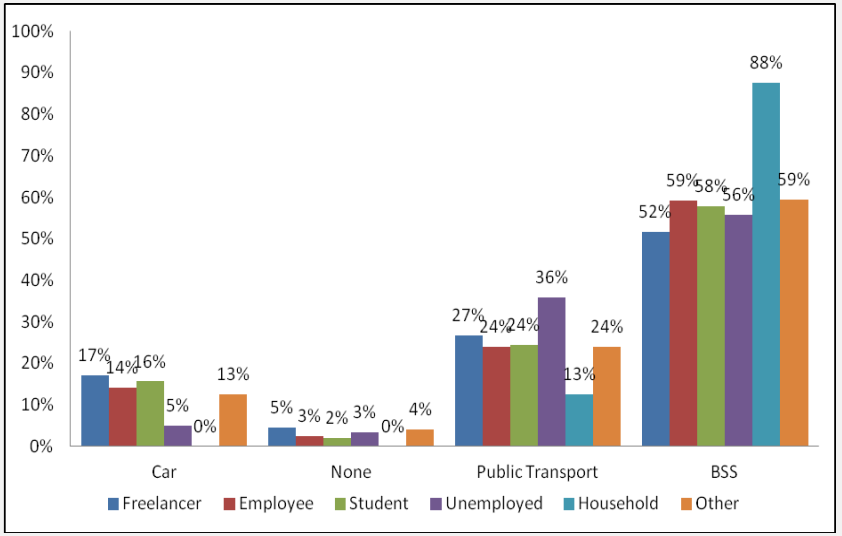
Data processing

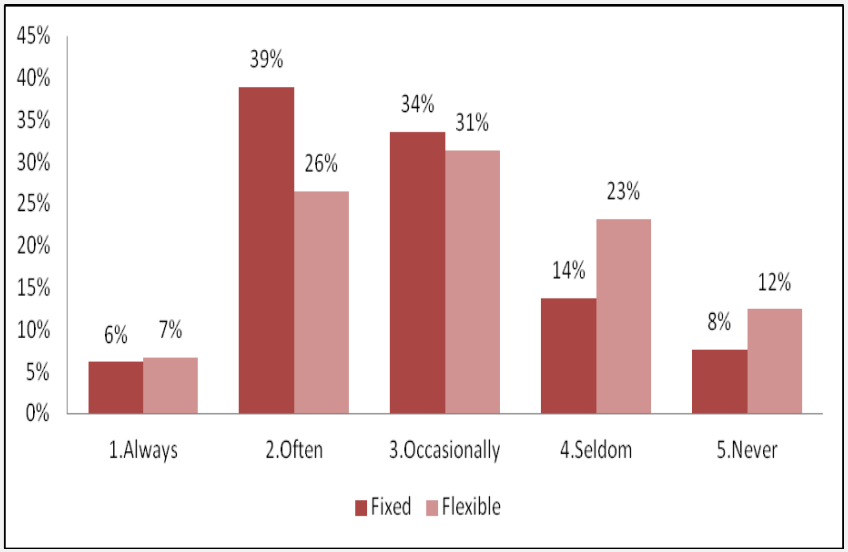
Questions analysed

- Stated behaviour choices
- Gender
- Age
- Education
- Occupation
- Income
- Family
- Flexible working hours

Statistical analysis

- Descriptive statistics
- Logistic regression models





Model results

Independent variables	BSS			Car			Public Transport		
	βi	Wald	e_i	βi	Wald	e_i	βi	Wald	e_i
DISCRETE VARIABLES									
Convenience	0.953	9.44		0.537	6.25		0.537	6.25	
Age	0.905	5.61					0.600	3.33	
Sex	2.48	2.06		2.78	2.30		3.25	2.69	
CONTINUOUS VARIABLES									
Time	-0.083	-15.99	-0,575	-0.0497	-6.97	-0,774	-0.083	-15.99	-1,328
Cost	-0.274	-1.36	-0,025	-0.184	-5.26	-0,870	-0.184	-5.26	-0,176

Summary statistics

R^2=0,368

Likelihood ratio test is L_{rt}=2.059,13

Conclusions

The probability of choosing a Bicycle Sharing System is highly affected by

- **Time**
  Increased travel time affects negatively the probability of choosing a BSS
- **Cost**
  Increased cost affects negatively the probability of choosing a BSS
- **Travel comfort**
  The absence of bicycle lanes affects negatively the probability of choosing a BSS
- **Gender**
  Men prefer a BSS
- **Age**
  Young people aged 18-24 years old prefer a BSS

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