

# VU Research Portal

## **Economic Studies on Public Facility Use**

Kobus, M.B.W.

2015

### ***document version***

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

### ***citation for published version (APA)***

Kobus, M. B. W. (2015). *Economic Studies on Public Facility Use*. Tinbergen Institute.

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

### **E-mail address:**

[vuresearchportal.ub@vu.nl](mailto:vuresearchportal.ub@vu.nl)

# Contents

<b>List of Tables</b>	<b>ix</b>
<b>List of Figures</b>	<b>x</b>
<b>1. Introduction</b>	<b>11</b>
1.1 Research objective	11
1.2. Public facilities: four key policy issues	13
1.2.1. The first-come-first-served mechanism and hoarding behaviour	13
1.2.2 The on-street parking premium	15
1.2.3. Student commute time policies	16
1.2.4. University-provided desktop computers	17
1.3. Thesis overview	18
<b>2. Use-it-or-lose-it: empirical evidence on hoarding of congestible facilities</b>	<b>21</b>
2.1 Introduction	21
2.2 The data and descriptive statistics	24
2.2.1 The data and selections	24
2.2.2 Descriptive statistics	25
2.3 Conceptual framework and estimation methods	28
2.3.1 Conceptual framework	28
2.3.2 Estimation methods	29
2.4 The empirical results	32
2.4.1 Main results	32
2.4.2 Sensitivity analyses	35
2.5. Conclusion	35
Appendices	37
<b>3. The on-street parking premium and car drivers' choice between street and garage parking</b>	<b>41</b>
3.1 Introduction	41
3.2 Theoretical model and estimation procedure	44
3.2.1 Theoretical model on parking choice	44
3.2.2 Estimation procedure	47
3.3 The institutional environment and data	49
3.3.1. Institutional environment	49
3.3.2 The Data	51
3.4 Empirical Results	53
3.4.1 Main results	53
3.4.2 Parking choices in hypothetical pricing schemes	58
3.5 Sensitivity analyses	60
3.6 Conclusion	62
Appendices	65

<b>4. Student commuting time, university presence and academic achievement</b>	<b>69</b>
4.1 Introduction	69
4.2 Theoretical framework	70
4.3 Institutional context	75
4.4 Identification strategy	76
4.5 The data and descriptive statistics	80
4.6 Empirical results	83
4.6.1 Number of days present	83
4.6.2 Daily hours present	85
4.6.3 Academic achievement: average grades	86
4.6.4 Sensitivity analyses	88
4.7 Conclusions	91
Appendices	93
<b>5. Ownership versus on-campus use of mobile it devices by university students</b>	<b>101</b>
5.1 Introduction	101
5.2 Literature review	107
5.3 Empirical approach	109
5.4 The data and descriptive statistics	111
5.5 Econometric modelling of device ownership	115
5.5.1 Binary models	115
5.5.2 Multinomial estimate (device bundles)	118
5.3 Sensitivity analysis	120
5.6. Propensity for bringing devices to the university	121
5.7. Attitudes towards making laptop use mandatory	125
5.8. Conclusion	126
Appendices	129
<b>6. Conclusions</b>	<b>133</b>
<b>Reflection on data</b>	<b>139</b>
<b>References</b>	<b>141</b>
<b>Summary in Dutch</b>	<b>153</b>

# List of Tables

2.1	Descriptive statistics	26
2.2	Daily number of sessions conditional on use	26
2.3	Outflow probability	33
2.A1	Probability that computer user is a master student	39
3.1	Descriptive Variables	53
3.2	Probability of street parking	55
3.3	Street inflow and stock (for current and hypothetical parking schemes)	60
3.4	Sensitivity tests – IV linear regressions	61
3.A1	Almere CBD parking tariffs	66
3.A2	Probability of street parking – Saturdays	68
4.1	Descriptive statistics	82
4.2	Number of days present	84
4.3	Daily hours present (intensive margin)	86
4.4	Average grades	87
4.5	Sensitivity analyses for the effect of commuting time	89
4.A1	Student characteristics and transport modes	93
4.C1	Tests on exogeneity instrumental variable	97
4.D1	Result first stage regression	98
4.E1	Weekly hours present	99
5.1	Descriptive statistics on income and ownership of mobile IT device bundles among students (a)	114
5.2	Descriptive statistics on income and ownership of mobile IT device bundles among students (b)	115
5.3	Propensity for bringing mobile IT devices to university	122
5.4	Most important reasons for bringing device to the university	123
5.5	Most important reasons for not bringing laptop to the university	124
5.6	Opinion on making laptop use mandatory	126
5.A1	Descriptive statistics on student characteristics	129
5.A2	Binary logit estimate on device ownership of students	130
5.A3	Multinomial logit estimate on ownership of device bundles among university students	131
5.A4	Income elasticities IT devices (separate models)	132

# List of Figures

2.A1	The distribution of occupancy rates (university computers)	37
3.A2	Occupancy level per hour of the day (university computers)	38
3.1	The probability of choosing street parking (current and hypothetical pricing schemes)	59
3.A1	Map of Almere CBD (circles denote garages)	66
4.B1	The number of students per municipality of origin	94
4.B2	Mean public transport travel time to closest two university cities (instrumental variable)	95
4.B3	The Dutch provinces	96
5.1	Income and IT device ownership probabilities	117
5.2	Income and IT device bundle ownership probabilities	119