

The impact of residential urbanism and aging of young adults on car travel demand in the Netherlands

Master Thesis Urban, Port and Transport Economics
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Introduction

- Mobility growth plateau in the Netherlands
- Demographic trends
- Urbanization and young adults decrease car travel?

I. “How does the impact of residential urbanism on car travel behaviour differ among different type of household compositions in the Netherlands?”

II. “Does car travel behaviour of young adults in the Netherlands differ from older adults? And does car travel behaviour (still) differ when these young adults grow older?”

Methods

- The Netherlands Mobility Panel
- Waves of the year 2013 and the year 2019
- Three-day travel diary data
- Urbanism & household size

Findings

Residential urbanism & car travel

Household type	Residents of the most urban areas (2500 or more inhabitants/km ²)			Residents of the least urban areas (1000 or less inhabitants/km ²)		
	Singles, N = 251	Couple, N = 154	Couple + children, N = 57	Singles, N = 123	Couple, N = 303	Couple + children, N = 202
License holding	205 (82%)	134 (87%)	53 (93%)	109 (89%)	276 (91%)	195 (97%)
Car ownership	122 (49%)	133 (86%)	53 (93%)	93 (76%)	288 (95%)	190 (94%)
Preferred transport mode to work						
<i>Bike</i>	73 (29%)	38 (25%)	12 (21%)	21 (17%)	46 (15%)	39 (19%)
<i>Car</i>	50 (20%)	36 (23%)	30 (53%)	38 (31%)	88 (29%)	122 (60%)
<i>Not applicable</i>	75 (30%)	48 (31%)	9 (16%)	43 (35%)	157 (52%)	26 (13%)
<i>Public transport</i>	19 (7.6%)	12 (7.8%)	2 (3.5%)	5 (4.1%)	1 (0.3%)	3 (1.5%)
<i>Walking</i>	6 (2.4%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)
Preferred transport for groceries						
<i>Bike</i>	73 (29%)	38 (25%)	8 (14%)	44 (36%)	103 (34%)	41 (20%)
<i>Car</i>	41 (16%)	42 (27%)	26 (46%)	32 (26%)	108 (36%)	109 (54%)
<i>Not applicable</i>	29 (12%)	20 (13%)	4 (7.0%)	11 (8.9%)	21 (6.9%)	11 (5.4%)
<i>Public transport</i>	1 (0.4%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)
<i>Walking</i>	52 (21%)	19 (12%)	4 (7.0%)	7 (5.7%)	16 (5.3%)	5 (2.5%)
Home to work travel by car	64 (25%)	43 (28%)	31 (54%)	45 (37%)	93 (31%)	129 (64%)
Average number of trips	13.0 (7.1)	12.2 (7.1)	11.9 (6.2)	10.7 (5.6)	10.1 (4.8)	11.2 (5.2)
Average distance travelled (km)	229.8 (346.2)	149.8 (248.4)	217.1 (282.9)	142.2 (211.3)	107.1 (144.1)	147.6 (172.8)
Average number of trips by car	3.1 (3.9)	4.4 (4.1)	6.9 (5.4)	4.8 (3.9)	5.2 (4.0)	6.8 (4.8)
Average number of PT trips	3.9 (6.8)	3.0 (7.1)	1.4 (4.0)	1.2 (3.4)	0.2 (1.3)	0.1 (0.8)

Findings

Young adults & car travel

Comparison between older adults (group A) and young adults (group B) for the year 2013 and the year 2019

	Group A		Group B	
	2013, N = 282	2019, N = 282	2013, N = 217	2019, N = 217
Personal characteristics				
License holding	260 (92%)	258 (91%)	187 (86%)	203 (94%)
Car ownership	247 (88%)	245 (87%)	149 (69%)	181 (83%)
Household size	2.5 (1.4)	2.3 (1.2)	2.1 (1.2)	2.6 (1.4)
Trip characteristics				
Preferred transport mode to work				
Bike	74 (26%)	67 (24%)	54 (25%)	49 (23%)
Car	134 (48%)	124 (44%)	93 (43%)	92 (42%)
Not applicable	43 (15%)	41 (15%)	21 (9.7%)	18 (8.3%)
Preference for multiple transport modes	19 (6.7%)	43 (15%)	24 (11%)	44 (20%)
Public transport	8 (2.8%)	5 (1.8%)	20 (9.2%)	14 (6.5%)
Walking	4 (1.4%)	2 (0.7%)	5 (2.3%)	0 (0%)
Preferred transport mode to do groceries				
Bike	94 (33%)	69 (24%)	67 (31%)	31 (14%)
Car	97 (34%)	101 (36%)	60 (28%)	80 (37%)
Not applicable	7 (2.5%)	40 (14%)	9 (4.1%)	32 (15%)
Preference for multiple transport modes	36 (13%)	67 (24%)	41 (19%)	74 (34%)
Walking	48 (17%)	5 (1.8%)	39 (18%)	0 (0%)
Public transport			1 (0.5%)	0 (0%)
Home to work travel by car	137 (49%)	150 (53%)	105 (48%)	116 (53%)
Average number of trips	11.3 (5.0)	10.3 (5.5)	13.7 (7.1)	11.6 (6.0)
Average distance travelled (in kilometers)	171.1 (196.7)	160.5 (226.1)	271.0 (326.5)	205.5 (307.7)
Average number of trips by car	5.8 (4.4)	4.8 (4.5)	5.2 (4.9)	5.1 (4.4)
Average number of public transport trips	1.0 (3.0)	1.1 (3.4)	3.7 (6.7)	2.3 (5.4)



Discussion

- My results do not indicate significant decrease in car travel due to urbanization or changed travel of young adults
- Substitute or prevention for households with children
- Singles in the cities!

Ezra

Thank you!