

How does transport supply and mobility behaviour impact preferences for MaaS bundles? A multi-city approach

Konstantin Krauss, Daniel J. Reck, Kay W. Axhausen

Fraunhofer ISI, Karlsruhe &
IVT, ETH Zürich

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 Institut für Verkehrsplanung und Transportsysteme
Institute for Transport Planning and Systems

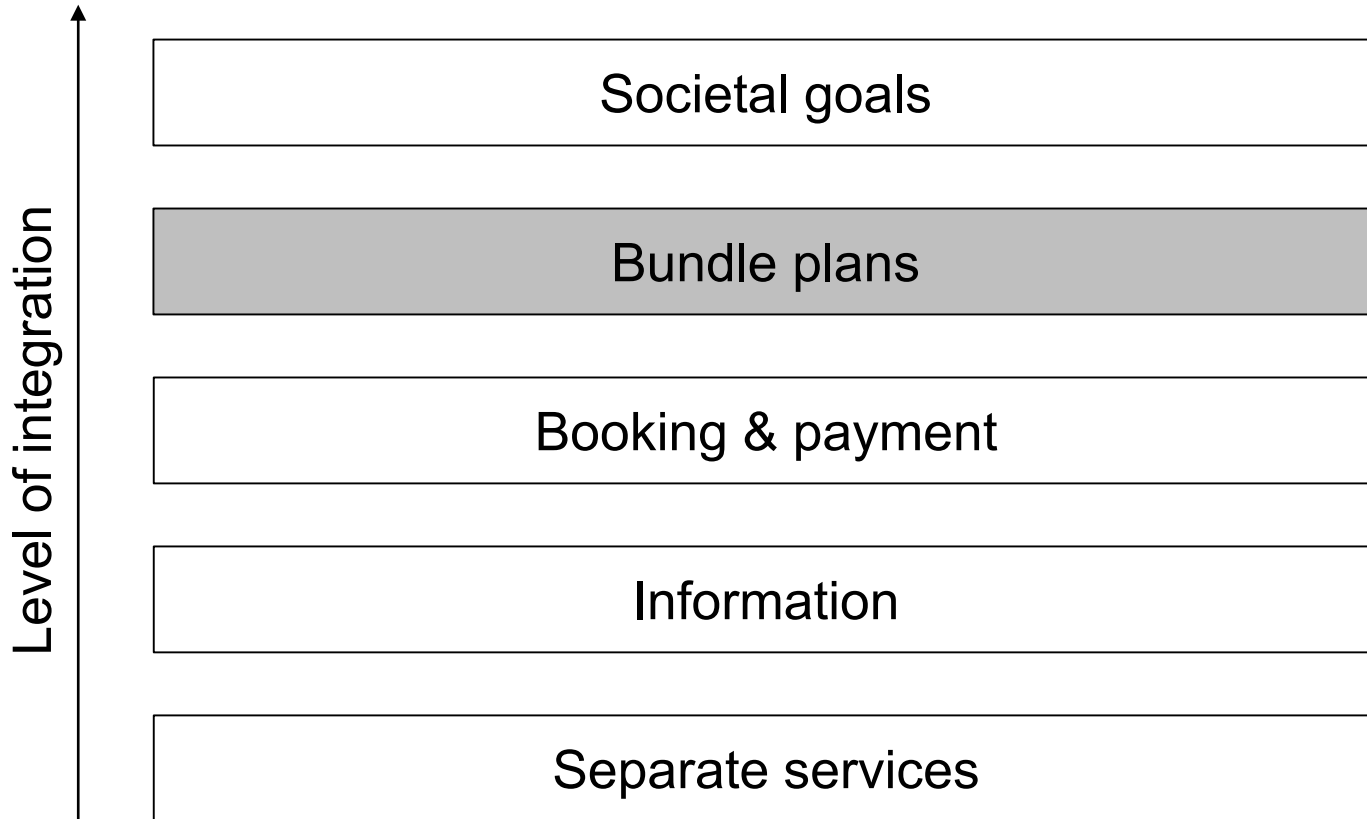
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Applied definition for Mobility-as-a-Service

«MaaS is a framework for delivering a portfolio of multi-modal mobility services that places the user at the centre of the offer.»

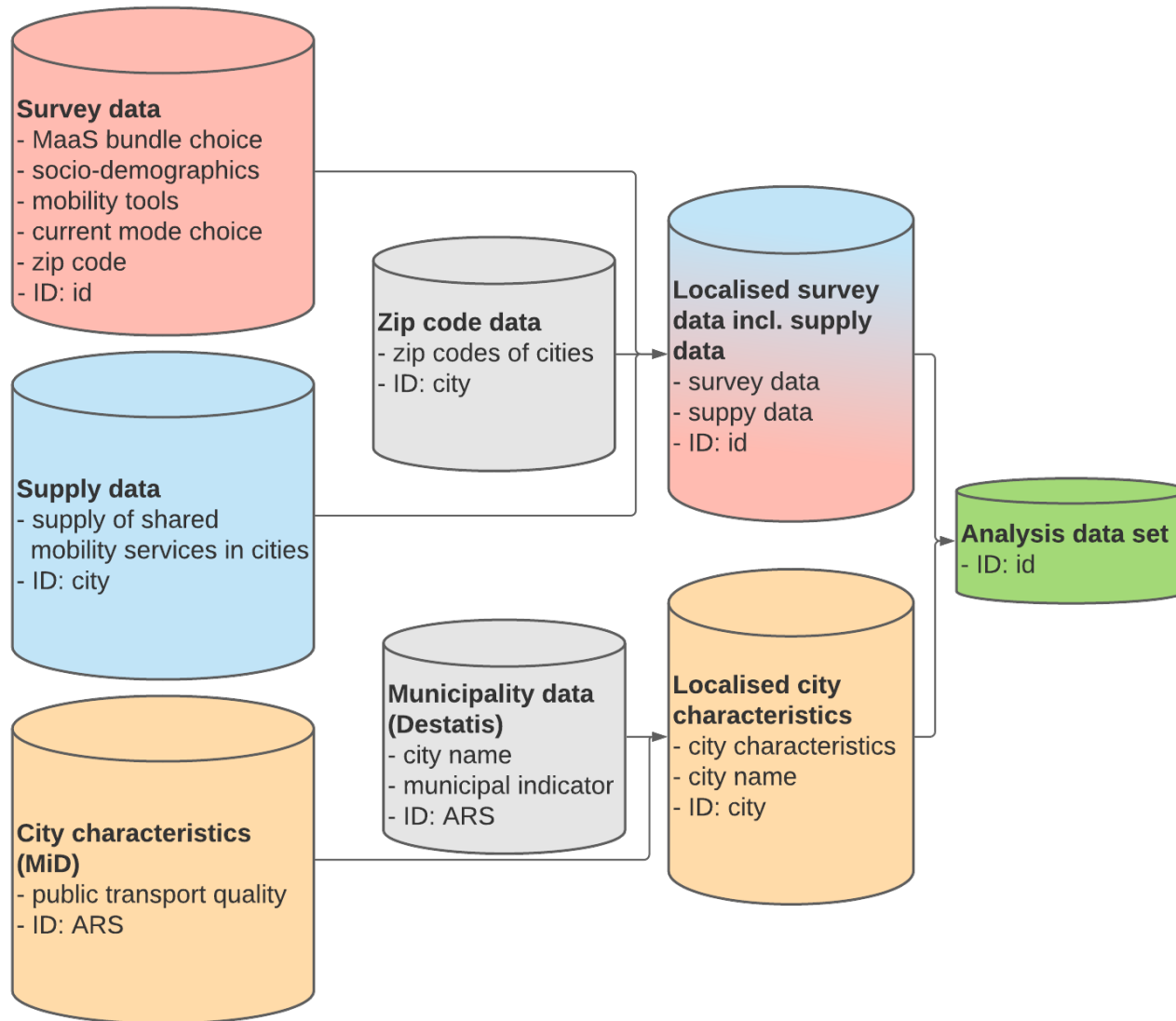
Integrating bundles into MaaS



Current relevant work about MaaS

- Mode choice behaviour
 - Motorized individual transport in focus (Storme et al., 2020)
 - Multimodality partly in focus (Matyas & Kamargianni, 2021)
 - Bundling
 - PT bundles more attractive (Tsouros et al., 2021)
 - Tendency towards non-usage of bundles (Caiati et al., 2020)
- ➔ Effect of different shared modes towards bundle choice?
- ➔ Role of prevailing transport supply and city characteristics?

Approach: Combination of data sets



Survey data: MaaS bundle choice

- Stated preference experiment: 4 choice sets per 8 blocks
- Population: People living in major German cities (83)
- $n = 471$

Entscheidung 1 von 4

	Paket 1	Paket 2	Abrechnung pro Fahrt
Monatliche Grundgebühr ⁱ	120 €	80 €	
Zeitkarte öffentlicher Verkehr (ÖPNV) ⁱ	inkl.	nicht inkl.	
Preis pro ÖPNV-Fahrt ⁱ	0,00 €	1,70 €	2,70 €
Inklusiv-Minuten E-Tretrollersharing ⁱ	200 min	15 min	
Preis E-Tretrollersharing pro Minute ⁱ	0,15 €	0,35 €	0,40 €
Inklusiv-Stunden Bikesharing ⁱ	7 h	1 h	
Preis Bikesharing pro Stunde ⁱ	3,00 €	3,00 €	4,00 €
Ihre Wahl:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Description of sample

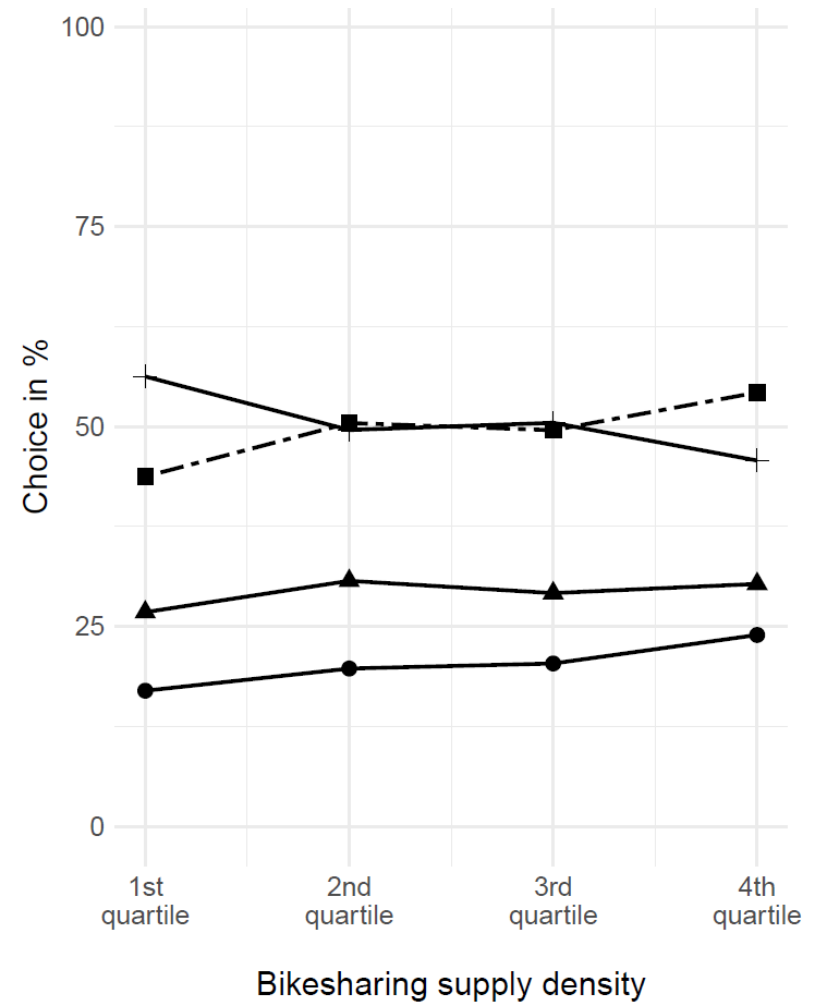
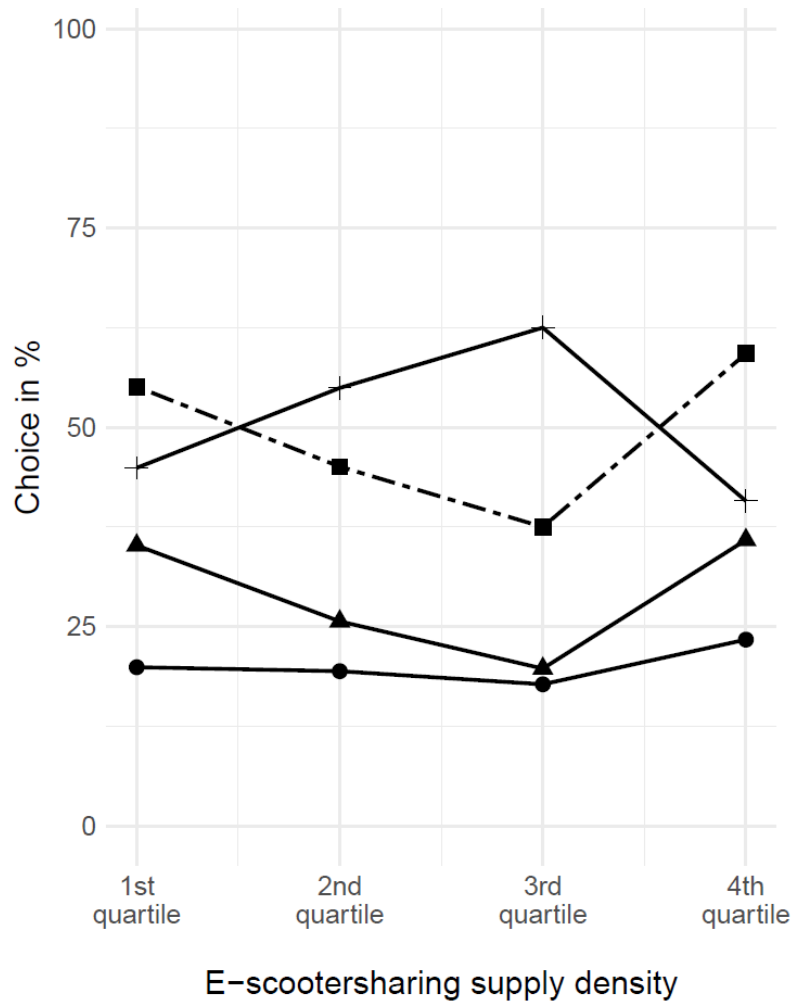
Variable		Sample
Gender	Female	43 %
Age	18-39	38 %
	40-59	47 %
	> 60	15 %
Monthly household net income ^a [EUR]	< 999	7 %
	1,000-2,999	46 %
	3,000-4,999	33 %
	>5,000	9 %
Ø no. cars in household		2
PT pass		56 %

^a Rest to 100% is none-response

Impact of mobility behaviour on bundle preferences

		„Micro“			„Moto“		
		Bundle	PAYG	χ^2	Bundle	PAYG	χ^2
Cars in household	0	+0.4		***		+8	**
	1	+3			+4		
	2	+0.1			+3		
	>2		+3		+1		
Private e-scooter	yes	+15		***	+11		***
	no		+15			+11	
PT pass	yes	+19		***	+29		***
	no		+19			+29	
Shared mobility usage	frequently	+6		***	+5		***
	regularly	+3			+5		
	seldom	+6			+9		
	never		+15			+19	

Impact of shared mobility supply on bundle preferences



● Bundle A ▲ Bundle B ■ Bundles Total + PAYG

Results

- PT pass holders favour bundles
- „Micro“ chosen by respondents with fewer cars
- „Moto“ chosen by respondents with more cars

- Previous use of shared modes increases bundle choice
- Owning vehicles increases bundle choice

- Threshold-effect for shared mobility supply

Implications

- Integrating different modes in bundles mean different choices
- Choosing a bundle does not make shared mobility enthusiasts
- Take care of “undesired” mode shifts
- Cities need to finetune shared mobility supply

Future work

- Integrate socio-demographic, mobility behaviour, and supply characteristics in modelling approach
- Decompose shared mobility supply in cities
- Control for residence of respondents

Thanks!

Questions?

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