

What do people know about their public transport options?

Investigating memory representations



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Agenda

- Highlights PhD Thesis
- Memory Representations - Paper
- Discussion

Ease-of-Use in Public Transportation – A User Perspective on Information and Orientation Aspects



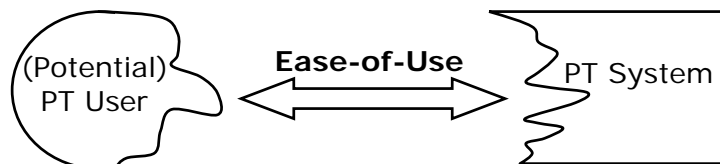
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PhD Thesis Katrin Dziekan

Research Framework

1. What concepts and ideas do people have about the PT system in metropolitan areas?
2. What information and orientation factors within the system enhance "Ease-of-Use"?



3. How can Ease-of-Use of a public transport route be measured?

Methods

How do people learn and experience an unknown PT system?



➔ Exchange students as subjects

- Semi-structured interviews in Stockholm, N=31
- In-depth study, N=1
- Questionnaire in Dresden/Germany, N=156

Methods

Evaluation of new trunk bus line

Before: Red bus (#46)



- Traveller interviews, N=541
- Telephone interviews with residents, N=200

After: Blue trunk bus (#2)



- Traveller interviews, N=368
- Telephone interviews with residents, N=121

Methods

How to measure Ease-of-Use?

➔ Develop and test a scale

- On-board questionnaire to travellers on buses, trunk buses and subways in Stockholm



PhD Thesis



Dziekan, Katrin (2008).

Ease-of-Use in Public Transportation – A User Perspective on Information and Orientation Aspects. Doctoral Thesis in Traffic and Transport Planning, Infrastructure and Planning, Royal Institute of Technology Stockholm. TRITA-TEC-PHD 08-001.

➔ www.diva-portal.org/kth/theses/abstract.xsql?dbid=4696

What do people know about their public transport options?

Investigating the memory representation of public transport through telephone interviews in a residential area of Stockholm, Sweden



Published: Transportation Vol.35, 4, S.519-538.

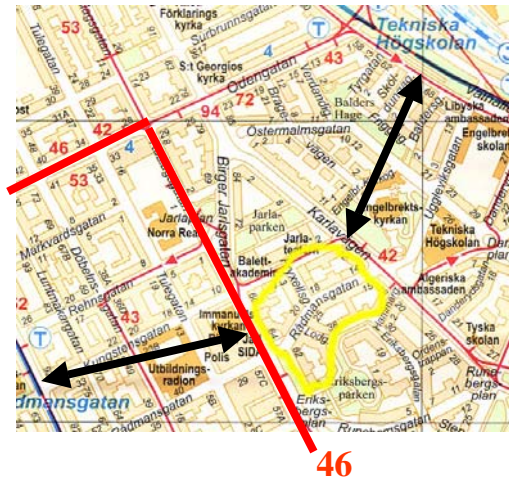
Memory Representation

- Three proposed factors that contribute to the extent to which a line is represented in memories
 - 1) Visibility
 - 2) Straight route layout
 - 3) Labelling

	Commuter train, tram	Trunk bus	Metro*	Suburban bus	Inner-city bus
Visible in the urban area					
- station	✓	✓	✓	-	-
- between stations	✓	-	-	-	-
Straight / on main streets	✓	✓	(✓)	(✓)	-
Labelled / important destination	✓	✓	✓	✓	-
Rank for anchoring in memory	1	2	3	4	5

Methods: Sample Selection

- Residential area in inner-city of Stockholm
- Randomised sample of telephone numbers
- Telephone interviews in January 2004
- Standardised interview guideline
- Excluded newcomers



Methods: Interview Guideline

- Estimation of walking distance to the next subway stations and the closest bus stop
- Name of the closest bus stop
- Route-knowledge to well-known and less well-known corridors
- Free associated travel options of a big transfer station
- Recognition tasks about well-known and less well-known places
- Service frequencies of selected lines
- Statistics

Results

- Residents have good knowledge of the PT options along well-known corridors
 - Know the closest bus stop well – but do not always know the exact name
 - Estimate the distances correctly
- Memory representation of lesser known corridors is of a poorer quality

Results

Service Frequency Estimations

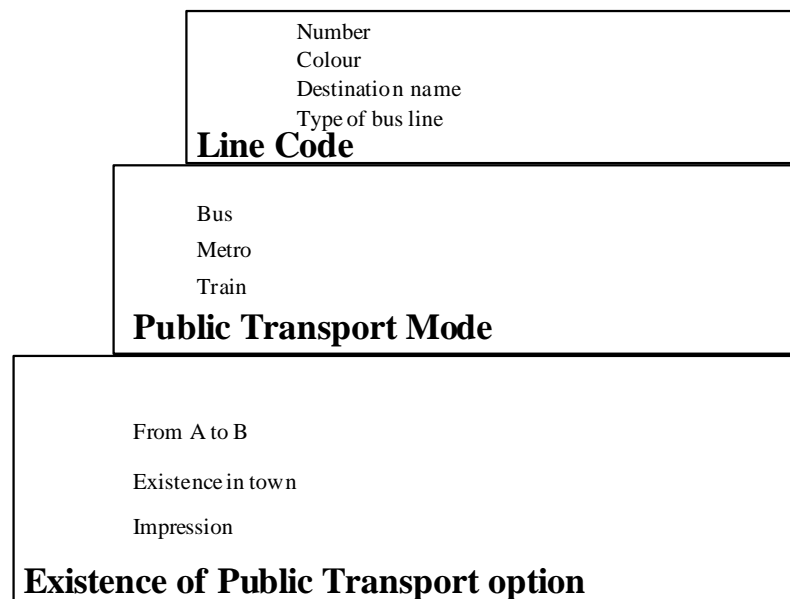
Table 4: Answers to the service frequencies (N=204)

	Do not know	Right answer (min)	Estimate average (min) (SD)	Difference in min	Difference in percentage
Rush hours (weekdays 7-9 and 16-18)					
Bus 46: Jarlapan - Kungsträdgården	4%	5	6.6 (2.4)	+1.6	+32%
Metro: Rådmanngatan - Gamla Stan	6%	3	4.9 (2.3)	+1.9	+63%
Bus 42: Jarlapan - Karlapan	8%	11	9.2 (2.7)	-1.8	-16%
Bus 43: Jarlapan - Södra station	17%	12	9.9 (3.6)	-2.1	-18%
Sundays (in the middle of the day)					
Bus 46: Jarlapan - Kungsträdgården	6%	8	14.4 (5.4)	+6.4	+80%
Metro: Rådmanngatan - Gamla Stan	7%	3	10.1 (4.4)	+7.1	+337%
Bus 42: Jarlapan - Karlapan	10%	15	15.8 (5.0)	+0.8	+5%
Bus 43: Jarlapan - Södra station	16%	20	17.4 (5.9)	-2.6	-13%

Results

- No influence of quality of memory representation:
 - gender
 - Age
 - employment status
 - level of education
 - car availability
- Experience increased knowledge:
 - Frequent users had more detailed memory representation
 - Less frequent users also had a considerably- and good memory representation
- In Stockholm the knowledge hierarchy was:
 - 1) commuter train and trunk bus line
 - 2) metro line
 - 3) suburban bus
 - 4) inner-city bus

Results: Organisation of PT knowledge



PhD-Thesis: Advice to PT Industry

1. Maps are important
2. Each single stop = entrance to the system
3. Tourist strategy
4. Newcomer strategy
5. Youth marketing