

Effects of residential self-selection on travel mode choice and implications for land use and transport planning strategies

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Integriertes Verkehrs- und
Mobilitätsmanagement
Region Frankfurt RheinMain



AGENDA

1. *WHAT IS IT ALL ABOUT?*
2. *IS RESIDENTIAL SELF SELECTION FOR REAL?*
3. *POSSIBLE POLICY IMPLICATIONS – ARE THERE ANY?*



1. WHAT IS IT ALL ABOUT?



WHAT IS IT ALL ABOUT?

ILUT strategies

BE

built environment

ILUT



NA

(neighbourhood) accessibility
a) land use patterns
b) transportation system
c) design

individual travel decisions

AT

attitudes
preferences

LS

life situation

MT

avail. of mobility tools

TB

travel behaviour

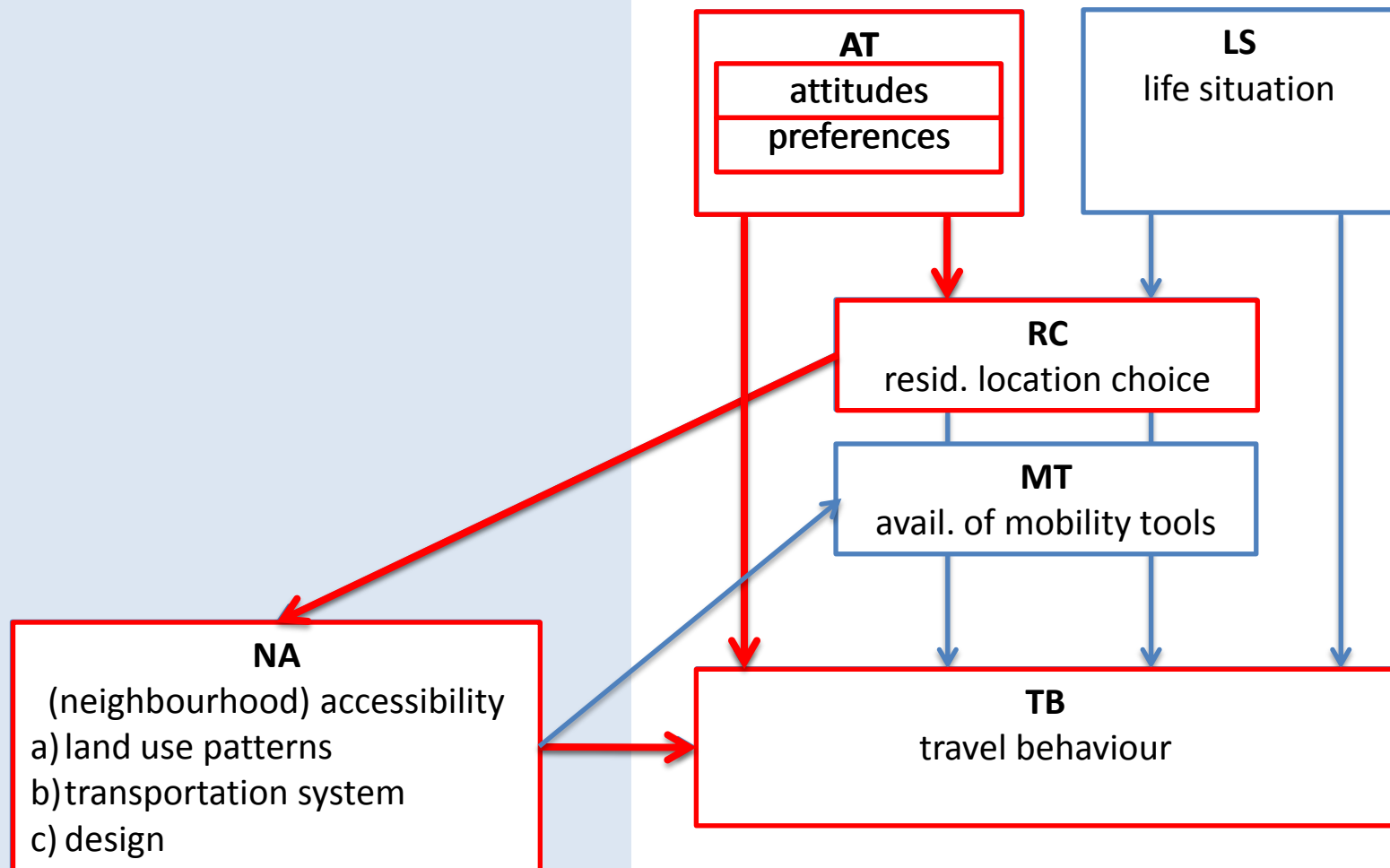
WHAT IS IT ALL ABOUT?

Residential self selection (RSS)

BE

built environment

individual travel decisions



2. IS RESIDENTIAL SELF SELECTION FOR REAL?



IS RESIDENTIAL SELF SELECTION FOR REAL?

Existing empirical evidence – overview

In general:

- *large number of studies from the USA, few from Europe*
- *proof of causality is methodological challenge → large variety of approaches are applied, mostly on cross sectional data*
- *structural equation modelling based on panel data seems to be needed*

Results:

- *RSS has a significant effect on TB (direct/indirect)*
- *Influence of BE is reduced but remains significant*
- *the absolute or relative (to BE) strength of RSS isn't assessed too often ...*
- *structural equation modelling confirms numerous relevant bidirectional links*



IS RESIDENTIAL SELF SELECTION FOR REAL?

Evidence from three German cities

Study:

- *Base: Data on 2.511 households and 5.126 individuals*
- *Topics: life situation, location preferences, location choice, mode choice, attitudes, mobility tools, accessibilities*
- *Approach: statistical control by means of binary regression models (location choice, travel mode choice)*

Results:

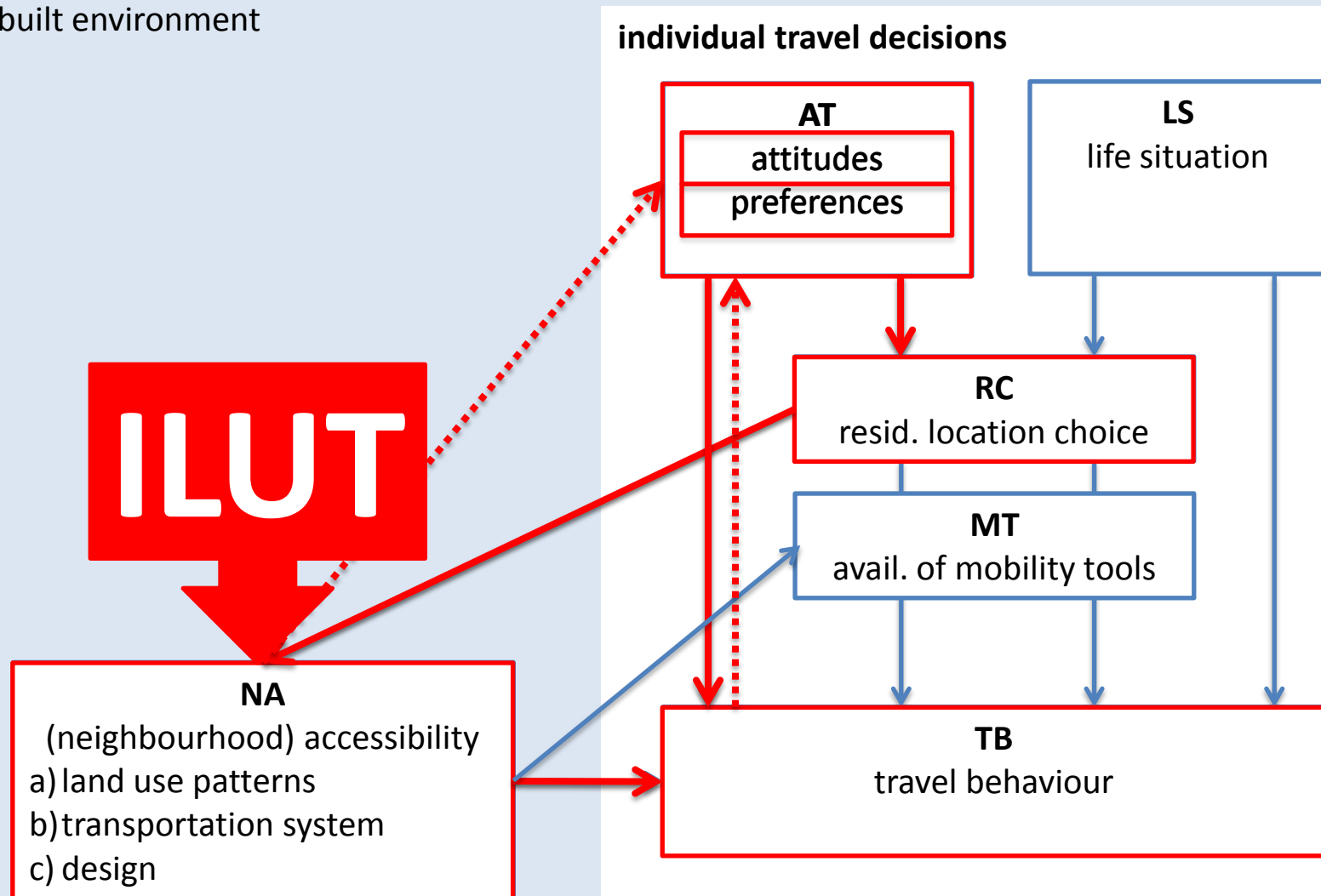
- *models show significant direct effects of RSS on TB for all transport modes*
- *models indicate that even relevant indirect effects may exist*
- *significant impact of BE on TB remains*
- *impact of RSS appears to exceed that of BE*



IS RESIDENTIAL SELF SELECTION FOR REAL?

BE

built environment



3. POSSIBLE POLICY IMPLICATIONS ...ARE THERE ANY?



Possible policy implications of RSS on ILUT

Are ILUT strategies due to the existence of residential self-selection essentially put into question at least concerning the goal of fostering sustainable TB?

Rather not!

- *ILUT strategies are a prerequisite for RSS taking place!*
- *remaining direct effects of BE on TB*
- *even indirect effect ($BE \rightarrow AT \rightarrow TB$) indicates that AT is not invariable*



Possible policy implications of RSS on ILUT

Which impact may residential self-selection then have on the effectiveness of ILUT strategies?

- *question of match or mismatch*
- *the “nice and easy way”:*
 - *targeting “easy to reach” potential for sustainable transport*
 - *produces matches → strategy almost with a success guarantee ...*
- *the “evil way”:*
 - *Restricting all further development to ILUT*
 - *most likely to produces mismatches → goals concerning TB will not be reached due to unintended behaviour of mismatched??*



Possible policy implications of RSS on ILUT

When doing it the “evil way”, is the effect of a possible spatial mismatch due to suppressed self-selection of any practical relevance?

- *mismatch may be reduced by the impact of BE on AT (BE → AT → TB)*
- *unintended behaviour may only occur in case of individuals with distinct travel related attitudes (→ “die hard car drivers”) in very restrictive developments*
- *surveys on AT indicate that these may be a minority*
 - *rather little practical relevance in general*
 - *most likely problematic outside core metropolitan areas*



Possible policy implications of RSS on ILUT

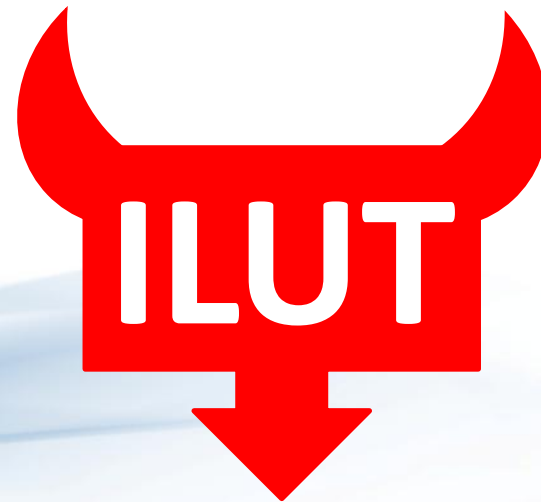
What practical consequences for ILUT strategies may be derived from the research on residential self-selection?

- *target group specific planning → AT surveys*
- *ILUT strategies should target the region, especially facing tight housing market conditions in core areas (→ “urban renaissance”)*
- *Flexible, adaptive (“resilient”) concepts on neighbourhood level*
- *add Mobility Management to the ILUT tool box*
- *(control for AT when evaluation ILUT developments)*



CONCLUSIONS

- *RSS does exist and most likely impacts the effectiveness of ILUT strategies*
- *the impacts can be expected to be rather (spatially) limited*
- *all tools seem to be at hand to account for RSS*
- *the existence of RSS is a case for ...*
 - ... *target group specific concepts*
 - ... *adding Mobility Management measures to ILT strategies to facilitate attitudinal change*
 - ... *trying it the “evil way” ... especially considering the end of the fossil mobility era*



Kontakt

Dipl.-Ing. André Bruns

ivm GmbH

Lyoner Str. 22

60528 Frankfurt am Main

Tel. +49 (0) 69 – 66 07 59 33

Fax.+49 (0) 69 – 66 07 59 90

Email: bmm@ivm-rheinmain.de



www.ivm-rheinmain.de