



Observational study on driver secondary tasks in Germany

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Two Research Questions

How much of a problem is distraction in Germany?



Do drivers compensate for their distraction?

- Only when standing at a traffic light?
- Less in the city than at the highway (Autobahn)?

How did we do it?

Method Study I

Observations in three towns:

- Braunschweig, Hannover, Berlin
- Three observers (one for each town)

Frame of observation:

- April to November 2015
- Only daytime (morning and afternoon)
- Mostly workdays (Berlin: also weekend)
- Mostly good weather
- Only cars
- Only within town
- Random sampling from Traffic



How did we do it?

Method Study II

Observation on the highway (Autobahn):

- A2 from Hannover – Braunschweig - Magdeburg
- One observer (being driven in a car)

Frame of observation:

- February to March 2016
- Only daytime
- Only cars
- On right lane and middle lane (from three lanes)
- Random sampling from Traffic

What was observed?

Dependent variables

Phone handheld

Phone hands-free

Use Smartphone (texting, apps, etc.)

Eating

Drinking

Smoking



Basic Structure

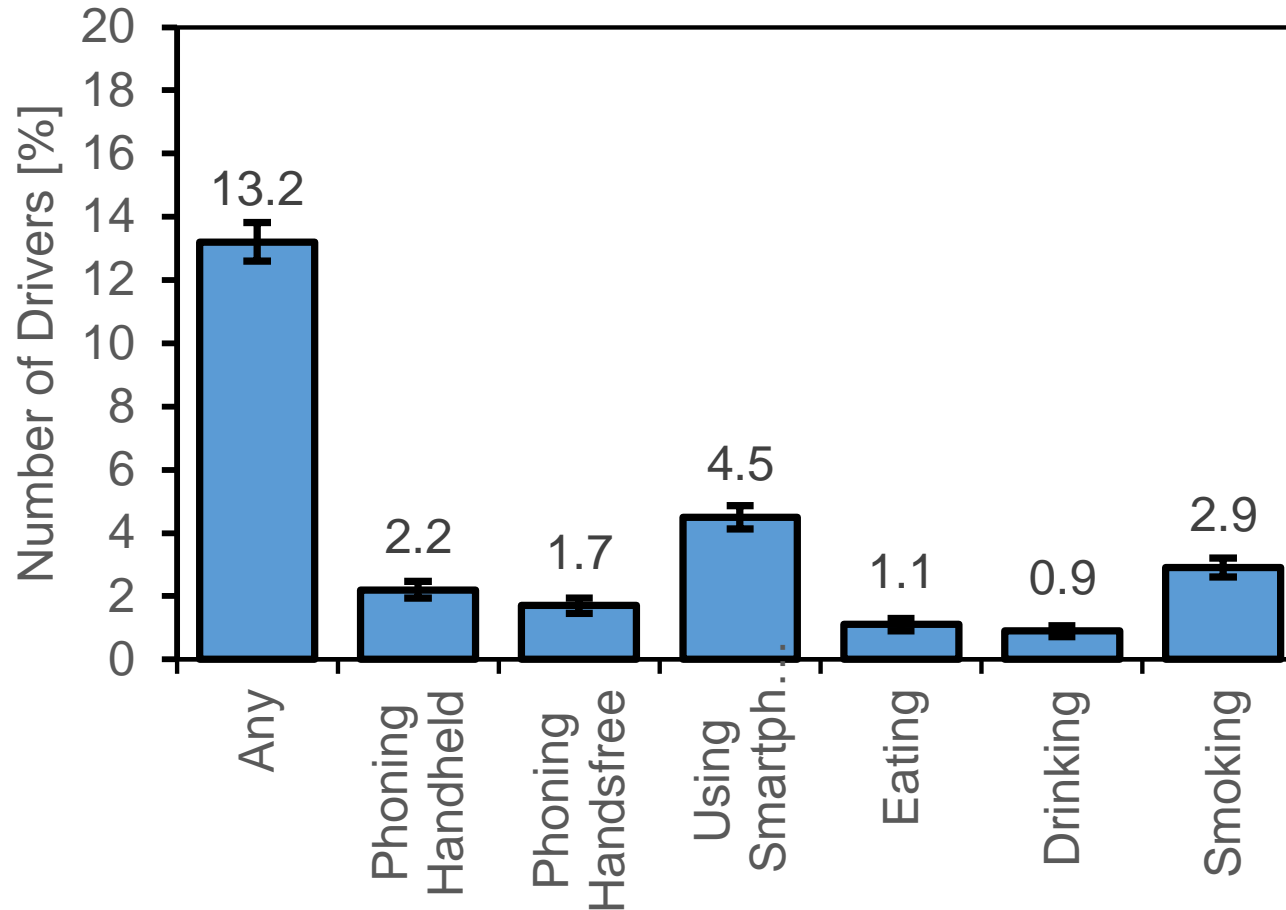
- Braunschweig: 2116 drivers
- Hannover: 3473 drivers
- Berlin: 6248 drivers
- Autobahn: 2013 drivers

Combining three towns with weighting (three factors):

Time of Day	# Lanes	Motion	Braunschweig	Hannover	Berlin	Overall
Morning	1	Drive	11.0	12.1	9.8	10.93
		Stand	3.1	6.9	2.0	3.98
	2	Drive	13.9	12.6	17.5	14.67
		Stand	5.5	2.7	3.4	3.85
Afternoon	1	Drive	21.3	27.8	14.7	21.25
		Stand	6.0	4.7	2.3	4.34
	2	Drive	29.3	27.6	42.6	33.16
		Stand	10.1	5.7	7.7	7.81

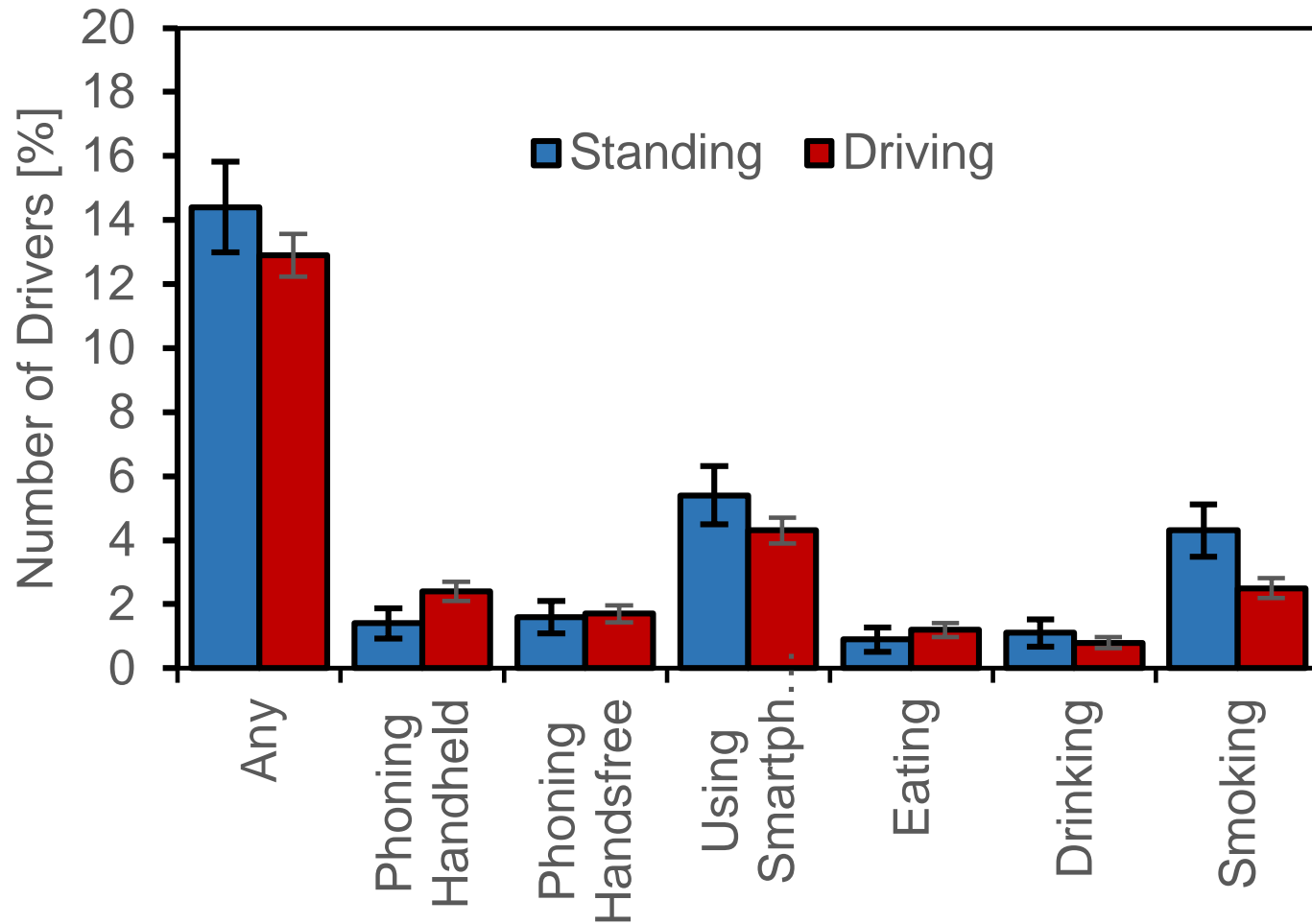
What do German drivers do?

Study I, 3 towns

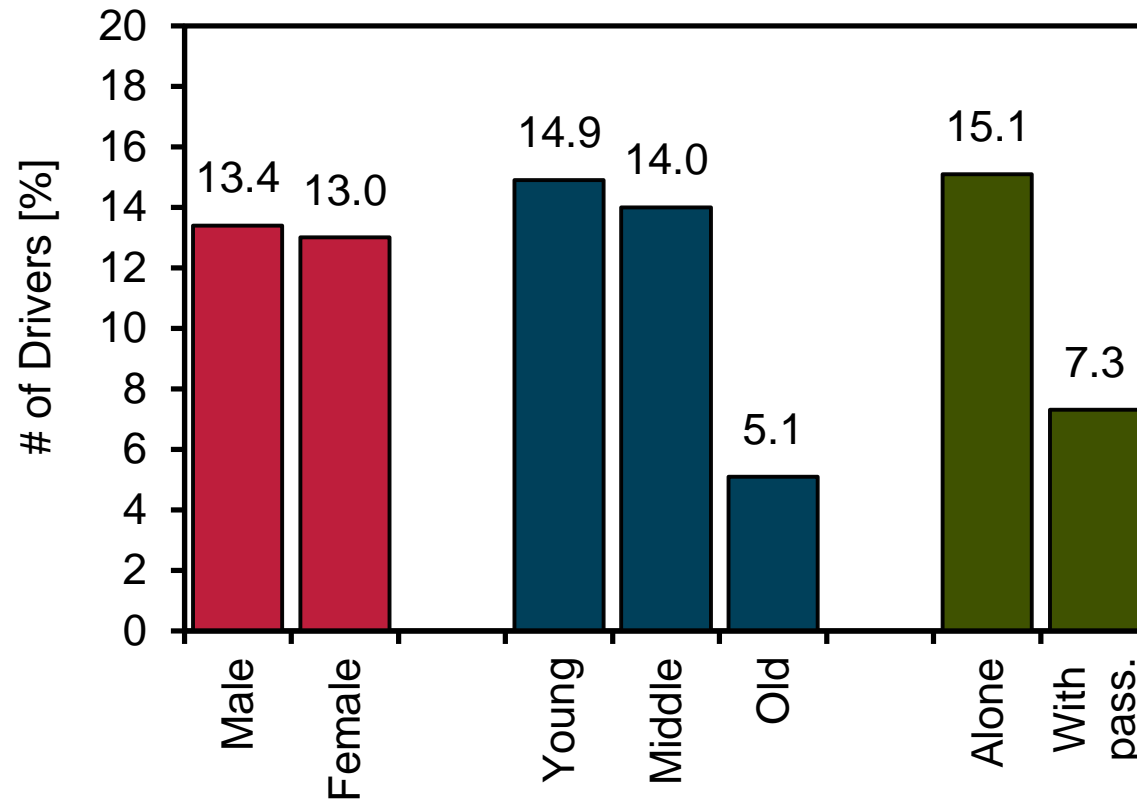


Adaptation of Behavior? Hardly...

Standing vs. Driving

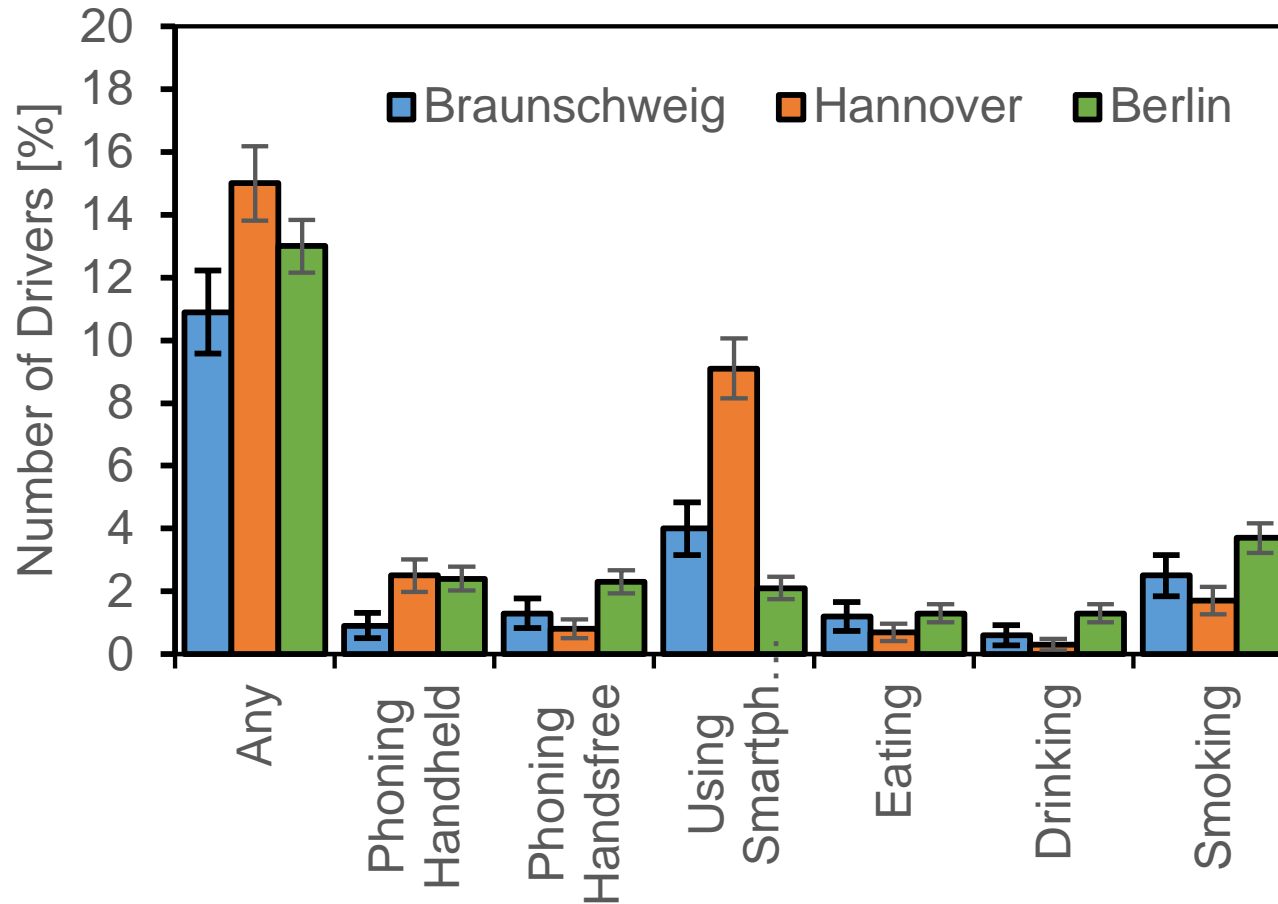


The strongest main effects



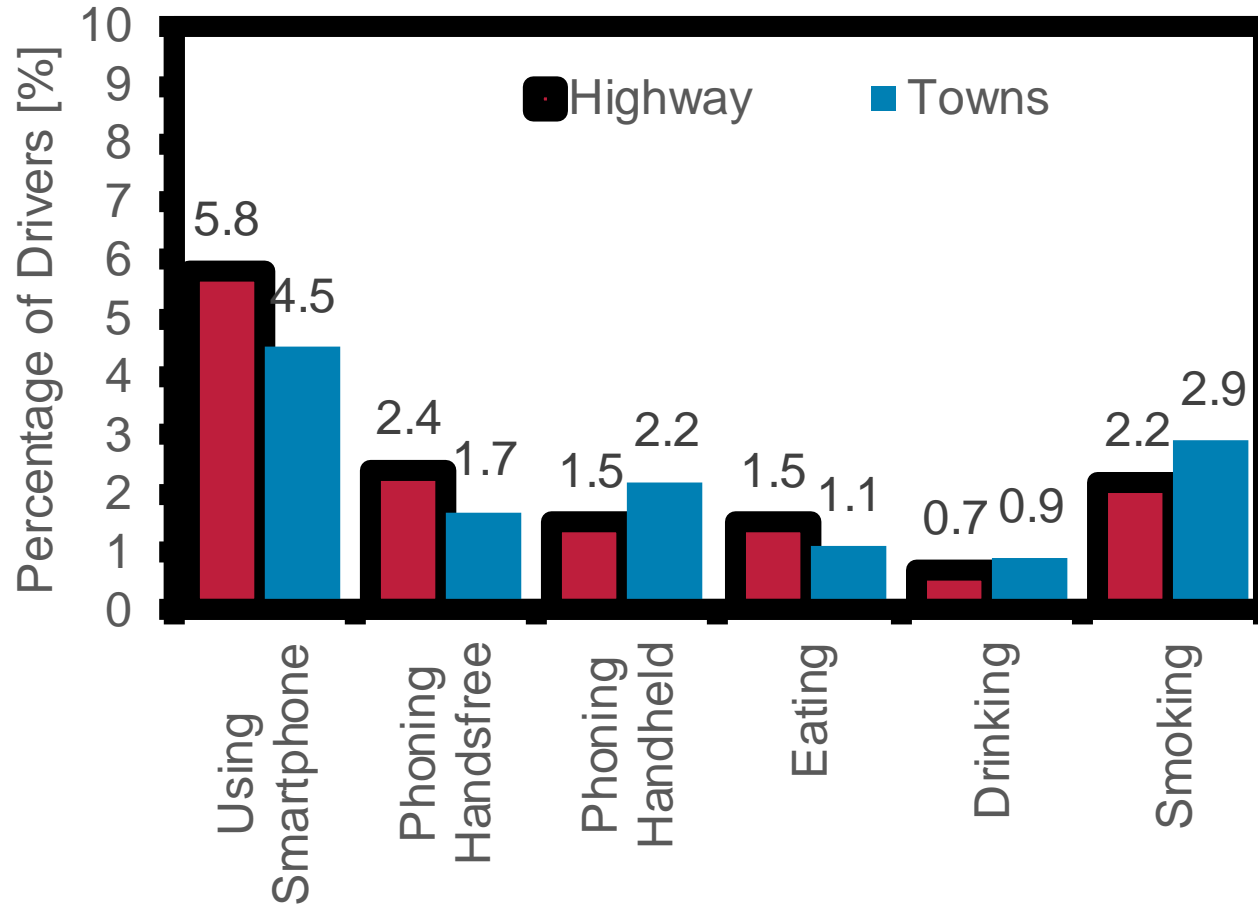
Towns are different

What is going on in Hanover?



The highway (Autobahn)

In comparison to study I



Summary

First large-scale observational studies in Germany

However:

- Only daytime, only three cities, only cars, mostly workday...
- Only one observer per location – reliability?

But:

- Large sample
- Systematic inclusion of different influencing factors

Results:

- Large percentage of distraction due to smartphones
 - Texting / using apps is even more frequent than phoning
 - Ban on handheld phoning does not really work

Drivers compensate a bit, but...

Using the smartphone less, when

- driving in town as compared to the highway
- driving in town than when standing at a red traffic light in town

However, the effects are small:

- 4.5% (town) vs. 5.8% (highway)
- 4.3% (driving) vs. 5.4% (standing)

(People seem to feel safer on the highway than when standing at a red traffic light)

Further questions

Why do people do that – and how do we counteract that?

- Underestimation of risk
 - Provide more information
 - Demonstrate / experience risk: Driving Simulator
- The objective accident risk is very small
 - 1 crash per 300.000 km in Germany
 - Risk while texting: OR = 6 (SHRP2, Victor et al., 2014):
 - 1 crash per 50.000 km
- How many police controls are needed, what consequences are effective?
- Why is the smartphone so interesting?
 - And how can we counteract that?
 - „Controlled texting“ as „controlled drinking“?

Next steps

Ongoing TU Braunschweig:

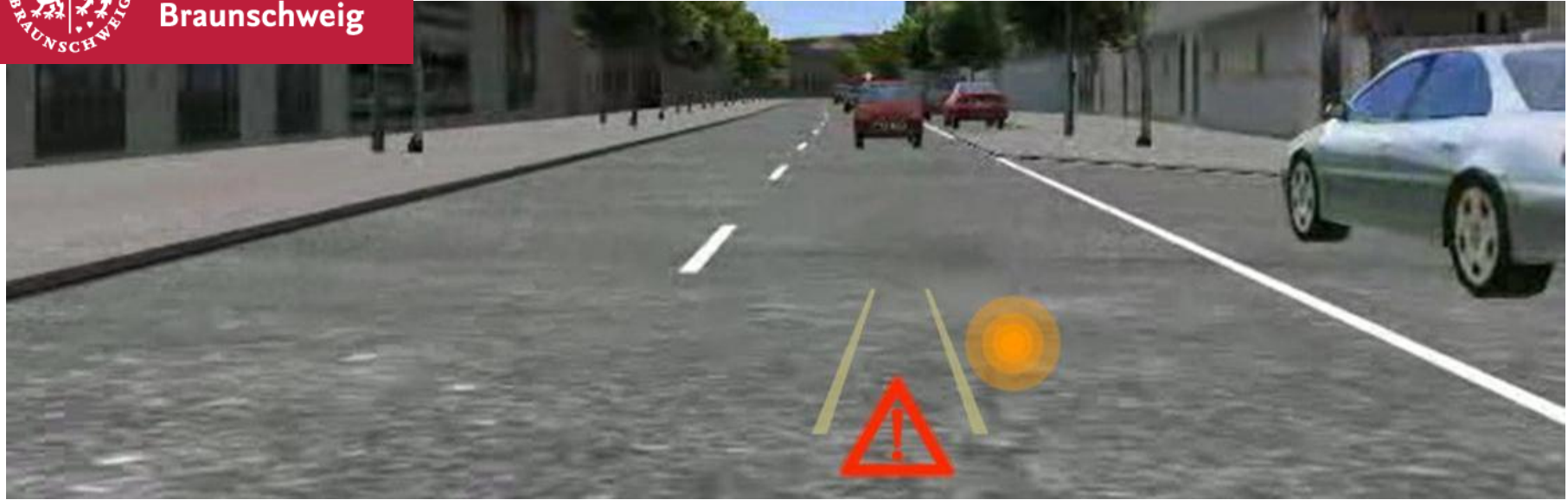
- More observations (other situations, replication)

Preparation of a national, regular observation (Bast)

- Representative observations for Germany
- Yearly, to see influences
- Currently: concept development and testing

Germany-wide representative study of the Bast

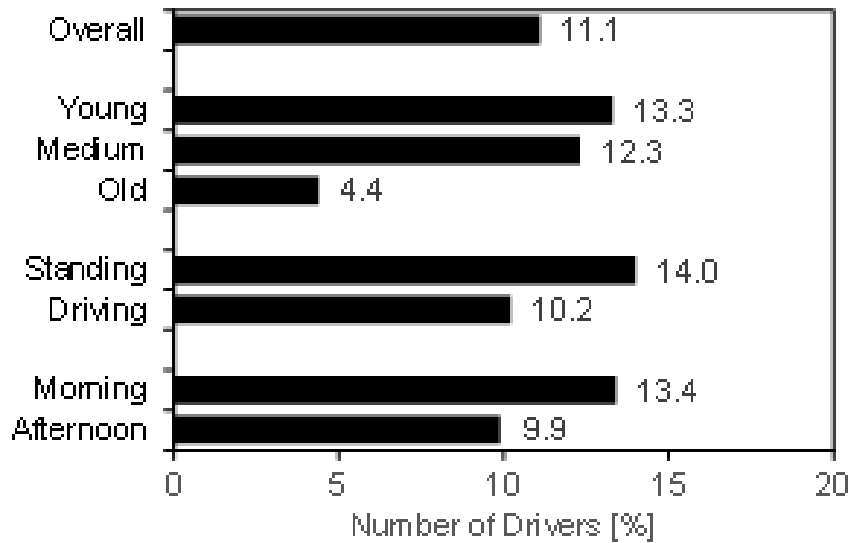
- Interviews of drivers right after stopping
- Validation by observations
- TU Chemnitz



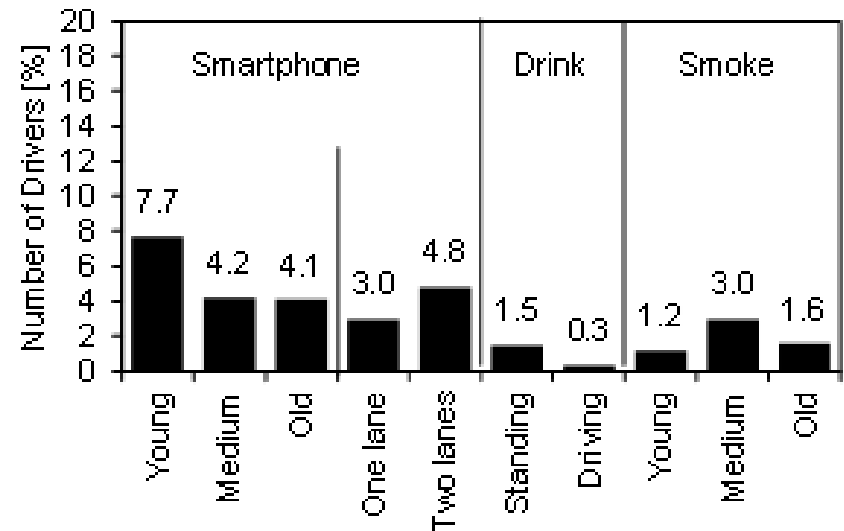
Thanks for your attention!

Other Factors - Braunschweig

Braunschweig Any Activity

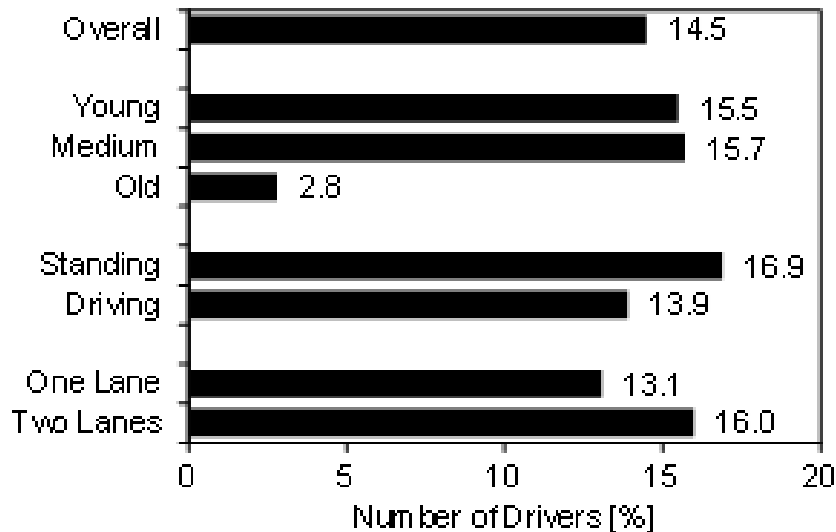


Braunschweig Single Activities

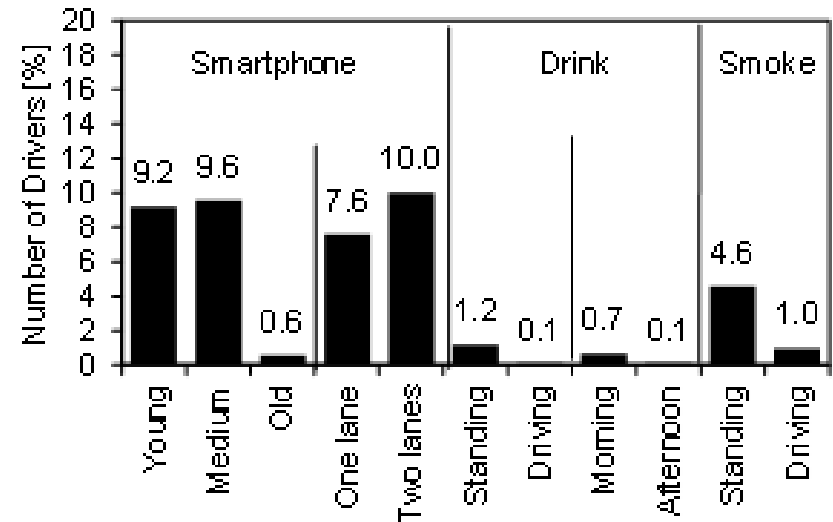


Other Factors - Hannover

Hannover Any Activity



Hannover Single Activities



Other Factors - Berlin

