

Influence of Driver Age and Road Class on German Type of Accident

Walter Niewöhner

IRTAD Conference
Lyon 27./28. Sept. 2022

Agenda

- Introduction
- VSR + VSS
 - DEKRA Road Safety Report
 - Road Safety Screening Tool of BW
- Result of Analysis
- Summary + Conclusion



DEKRA Road Safety Reports since 2008

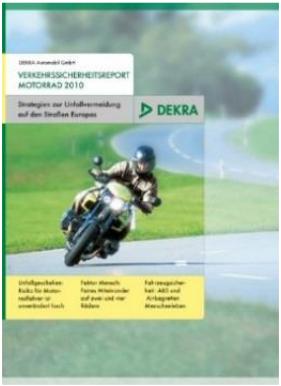
www.dekra-roadsafety.com



Passenger Car



Truck



Motorcycle



Pedestrians +
Bicyclists



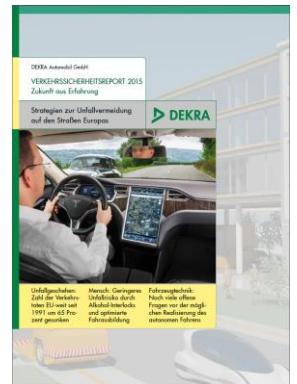
People +
Technology



Rural Roads



Urban Mobility



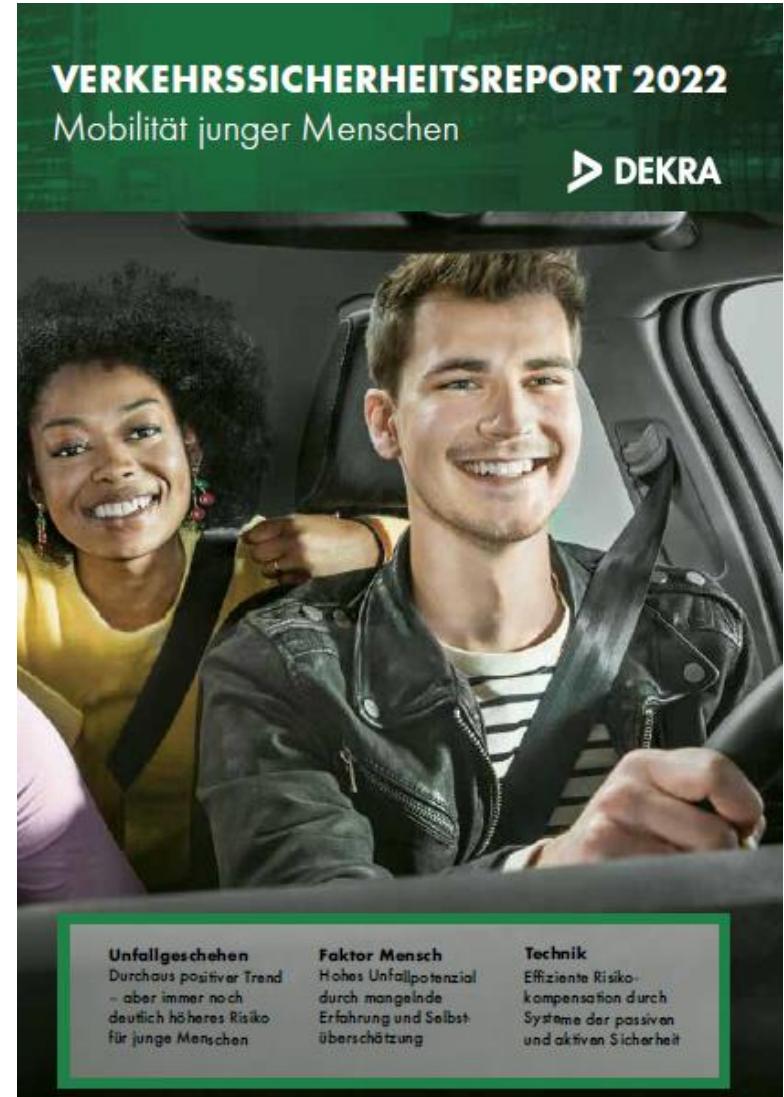
DEKRA Road Safety Report 2022

www.dekra-roadsafety.com

Mobility of young people

currently available: German + English

under preparation: French, Italian, Portugese, Spanish



Road Safety Screening Tool

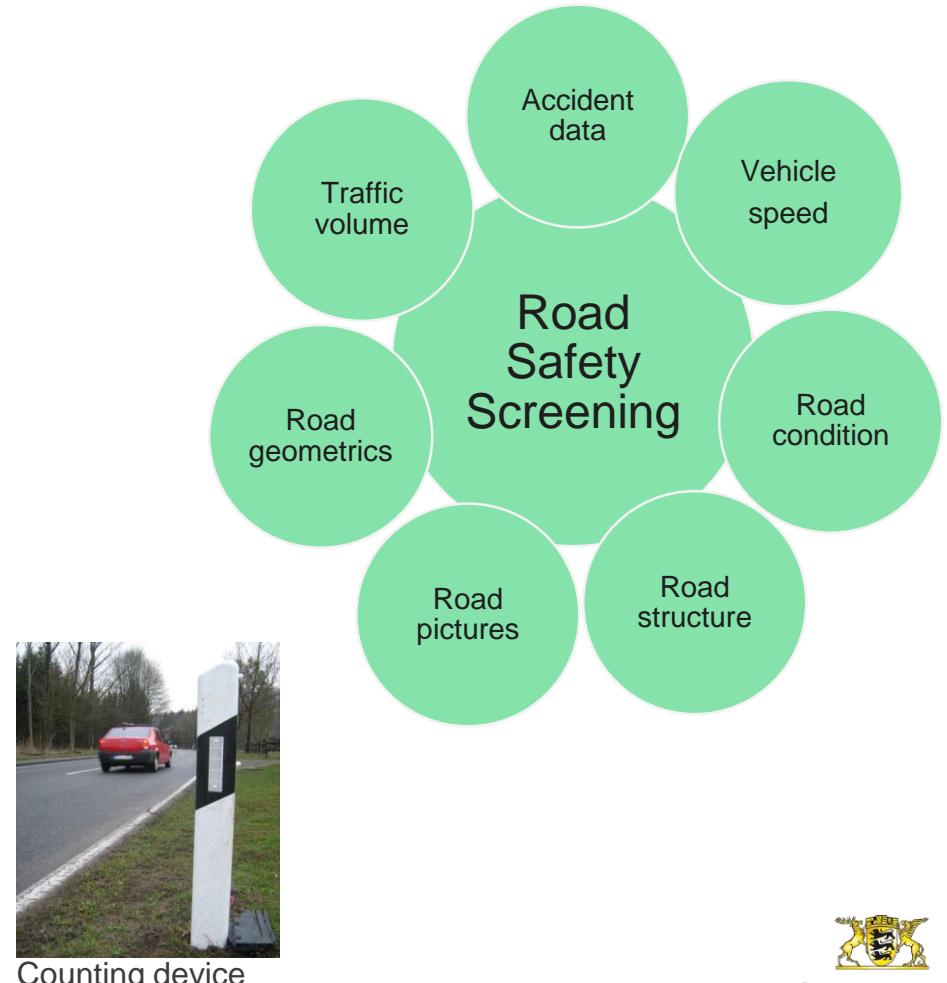
System created by

Road Traffic Ministry of Baden-Württemberg (BW)

- Accident data from Federal Statistical Office BW
- Road data from local maintenance area
- Traffic data from Road Traffic Ministry
- Data available for 8 types of road users

Combined on the developed platform

to spend the money for road safety measures
at the most important locations



Used Data

and Filtering

Road Safety Screening Tool
of Baden-Württemberg



Data of 2016 – 2020
n = 205,311 accidents

Limitation to “free road”
(no urban area)
n= 102,142



Caused by passenger car
n= 71,167

Type of Accident (Unfalltyp)

The Type of accident

describes the first conflict situation
which leads at the end to a collision.

Example:

A pedestrian is crossing a road. The car driver realizes without any action there will be a collision with the pedestrian and tries to avoid the collision by steering to the left lane. On the left lane there is a collision with an oncoming vehicle.

→ Type 4 (accident caused by crossing the road)



Type 1



Type 2



Type 3



Type 4



Type 5



Type 6



Type 7

Type of Accident (Unfalltyp)



Type 1

Driving accident
(Fahrunfall).



Type 2

Accident caused by turning
off the road
(Abbiege-Unfall)



Type 3

Accident caused by turning
into a road or by crossing it
(Einbiegen-/Kreuzen-Unfall)



Type 4

Accident caused by
crossing the road
(Überschreiten-Unfall)



Type 5

Accident involving
stationary vehicles (Unfall
durch ruhenden Verkehr)



Type 6

Accident between vehicles
moving along in carriageway
(Unfall im Längsverkehr)

Type 7 Other accidents

Types of Accident

all roads, parameter driver age

Type of Accident \ Age class of driver	Young 18 - 24	Middle aged 25 - 64	Senior 1 65 - 74	Senior 2 75 - ...
Total	n = 15,354 100%	n = 40,849 100%	n = 4,606 100%	n = 5,354 100%
Type 1 Driving Accident	n = 6,147 40.0%	n = 9,077 22.2%	n = 535 11.6%	n = 526 9.8%
Type 3 Turning into Accident	n = 2,669 17.4%	n = 10,462 25.6%	n = 1,922 41.7%	n = 2,466 46.1%
Type 6 Moving along carriageway	n = 4,302 28.0%	n = 13,709 33.6%	n = 1,297 28.2%	n = 1,446 27.0%

Types of Accident

parameter driver age + road class

		Total		'Bundesstraße' high level road		'Landesstr + Kreisstr'	
18 - 24	young	15.354	100,0%	5.623	100,0%	9.731	100,0%
	Type 1	6.147	40,0%	1.901	33,8%	4.246	43,6%
	Type 3	2.669	17,4%	967	17,2%	1.702	17,5%
	Type 6	4.302	28,0%	1.949	34,7%	2.353	24,2%
25 - 64	middle aged	40.849	100,0%	16.239	100,0%	24.610	100,0%
	Type 1	9.077	22,2%	3.234	19,9%	5.843	23,7%
	Type 3	10.462	25,6%	3.871	23,8%	6.591	26,8%
	Type 6	13.998	34,3%	6.431	39,6%	7.567	30,7%
65 - 74	Senior 1	4.606	100,0%	1.745	100,0%	2.861	100,0%
	Type 1	535	11,6%	209	12,0%	326	11,4%
	Type 3	1.922	41,7%	639	36,6%	1.283	44,8%
	Type 6	1.297	28,2%	562	32,2%	735	25,7%
75 plus	Senior 2	5.354	100,0%	1.977	100,0%	3.377	100,0%
	Type 1	526	9,8%	181	9,2%	345	10,2%
	Type 3	2.466	46,1%	877	44,4%	1.589	47,1%
	Type 6	1.446	27,0%	635	32,1%	811	24,0%

Difference
~20%

Types of Accident

parameter driver age + road class

		Total	
18 - 24	young	15.354	100,0%
	Type 1	6.147	40,0%
	Type 3	2.669	17,4%
	Type 6	4.302	28,0%

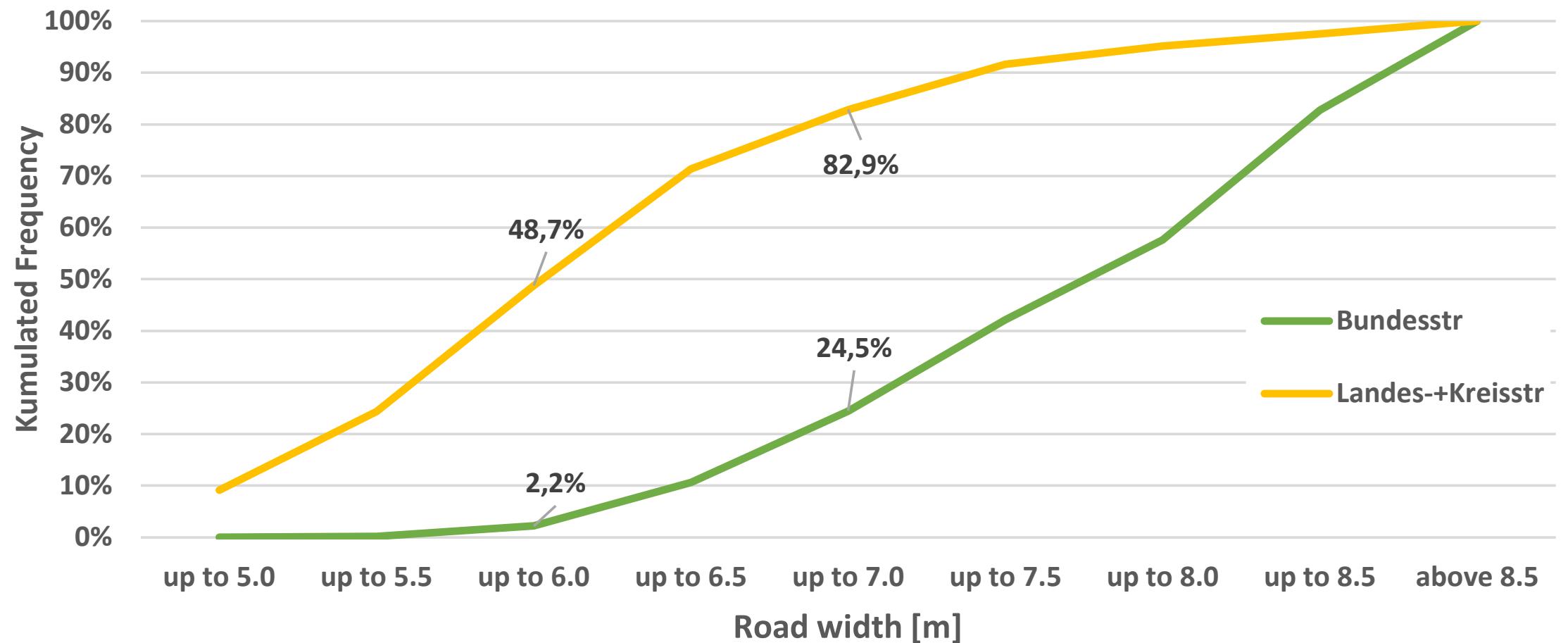
25 - 64	middle aged	40.849	100,0%
	Type 1	9.077	22,2%
	Type 3	10.462	25,6%
	Type 6	13.998	34,3%

"Bundesstraße" high level road	
5.623	100,0%
1.901	33,8%
967	17,2%
1.949	34,7%

"Landesstr + Kreisstr"	
9.731	100,0%
4.246	43,6%
1.702	17,5%
2.353	24,2%

25 - 64	middle aged	40.849	100,0%
	Type 1	9.077	22,2%
	Type 3	10.462	25,6%
	Type 6	13.998	34,3%

Width of Rural Roads in BW



Published figures from 2014

Accident circumstances (1)

		Total		'Bundesstraße' high level road		'Landesstr + Kreisstr'	
18 - 24	young	15.354	100,0%	5.623	100,0%	9.731	100,0%
	night	5.359	34,9%	1.973	35,1%	3.386	34,8%
	wet, icy, dirty	6.003	39,1%	2.165	38,5%	3.838	39,4%
25 - 64	middle aged	40.849	100,0%	16.239	100,0%	24.610	100,0%
	night	11.020	27,0%	4.397	27,1%	6.623	26,9%
	wet, icy, dirty	12.733	31,2%	5.046	31,1%	7.687	31,2%

Comparison of not perfect circumstances (night or wet/icy/dirty road)
between young drivers and middle aged driver 7 ... 8 % difference
no differences between road classes

Accident circumstances (2)

		Total		'Bundesstraße'		'Landesstr + Kreisstr'	
18 - 24	young	15.354	100,0%	5623	100,0%	9.731	100,0%
	v > vmax	331	2,2%	135	2,4%	196	2,0%
	v situation	5.419	35,3%	1654	29,4%	3.765	38,7%
25 - 64	middle aged	40.849	100,0%	16.239	100,0%	24.610	100,0%
	v > vmax	369	0,9%	150	0,9%	219	0,9%
	v situation	7.809	19,1%	2.725	16,8%	5.084	20,7%

The accident causes related to speed are

- unadopted speed (v situation)
- speed higher as allowed (v > vmax)

A chosen speed which is not adopted to the situation is mentioned more often.
A speed higher as allowed is more seldom.

Summary

- Accidents on smaller roads include more often a “loss of control”
- Younger drivers do have a very high share of loss of control especially on smaller roads
- Senior drivers show more often problems with “Giving the right of way”

Conclusion

- Younger drivers have to be trained especially on smaller roads
- Improve the safety features for smaller roads
- Improve safety equipment of vehicles



Results from federal state of Germany,
but to be transferable to other countries

Problematic: Young driver + old vehicle + small road

Thank you for
your attention
Merci beaucoup pour
votre attention

Walter Niewöhner
walter.niewoehner@dekra.com
(+49) 711 78 61 26 08

