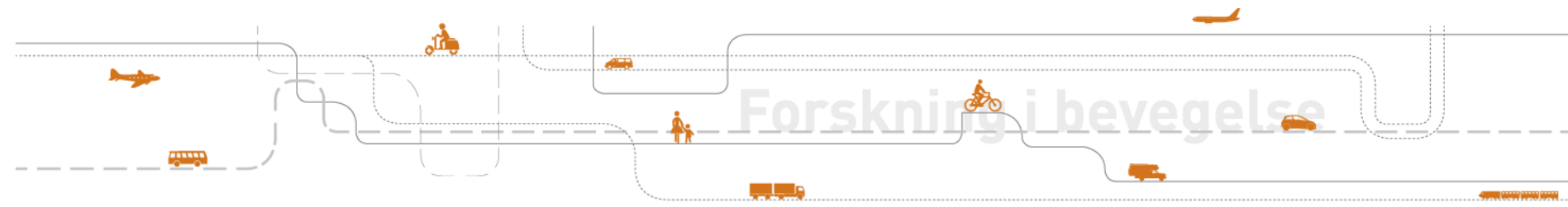


# Comparing national road safety culture in three African and three European countries

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# Background I:

- 1.19 million people die each year in traffic accidents
- LMIC have 92% of the fatalities
- Traffic fatality rate (per population) in Africa is 4 times as much as in EU-countries.
- WHO (2016): some indications of a high level of violations in some African countries (lacking seat belt, DUI).
- It has been suggested that differences in road safety culture to some extent can explain differences between road safety records of countries and transport modes.

# Background II:

- RSC is defined as:
  - *Shared norms prescribing certain road safety behaviours, and thus shared expectations regarding the behaviours of others, and*
  - *shared values and attitudes motivating and legitimizing behaviours*
- There are, however, few studies of national RSC,
- There is a need to develop and test conceptualizations and mechanisms, explaining the relationship between RSC, road safety violations and accident involvement.
- Also: When we come here: “there is something different”, but how can we measure it scientifically, and what is it?

# Background III:

- We therefore compare RSC in 3 x 3 countries.
- The three European countries are pioneers in the field of Vision Zero and Safe system implementation in road transport.
- **Overarching objectives:**
  - *Identify the elements of national RSC where we see the biggest differences between the African and the European countries.*
  - *Identify the elements of RSC that are most strongly related to road safety violations.*
- To what extent can we use the concept of RSC to explain different road accident risk levels in the European and the African countries?

# Aims of the study:

- 1) Compare accident involvement among car drivers and pedestrians
- 2) Compare road safety violations among car drivers and pedestrians
- 3) Compare elements of national RSC among car drivers and pedestrians in European and African countries
- 4) Examine the factors influencing safety outcomes focusing especially on different elements of national RSC
- 5) Examine and discuss the factors influencing the different elements of national RSC
- 6) Discuss how to influence elements of RSC to improve road safety in the African and the European context.

# Methods:

**The approach is explorative**, as there are few other studies of national RSC in general (cf. overarching objectives).

- 1) Field works for European and African researchers.
- 2) Interviews and focus groups to test and develop items.
- 3) Literature review
- 4) Pilot study of RSC in Norway and Ghana
- 5) Main method: Survey among over 4000 car drivers and pedestrians in 3 x 3 countries.

# Samples: Two modes, two continents

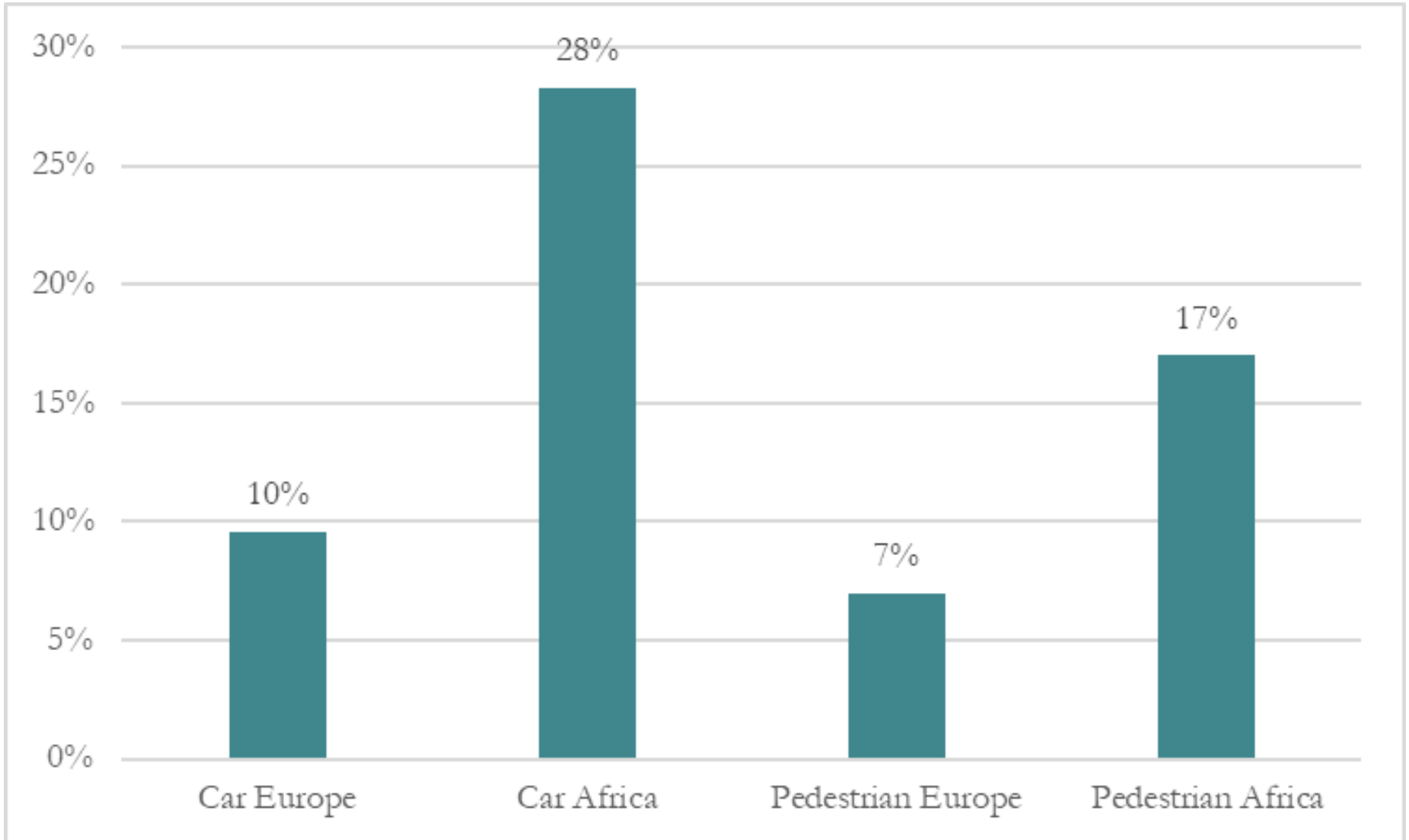
	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>Car Europe</b>	49%	51%	1136
<b>Car Africa</b>	69%	31%	965
<b>Pedestrian Europe</b>	48%	52%	1125
<b>Pedestrian Africa</b>	59%	41%	898
<b>Total</b>	55%	45%	4124

# Sample: Two modes, six countries

<b>Car Zambia</b>	339
<b>Car Tanzania</b>	216
<b>Car Ghana</b>	414
<b>Car Netherlands</b>	293
<b>Car Sweden</b>	299
<b>Car Norway</b>	544
<b>Pedestrian Norway</b>	545
<b>Pedestrian Sweden</b>	294
<b>Pedestrian Netherlands</b>	286
<b>Pedestrian Ghana</b>	311
<b>Pedestrian Tanzania</b>	250
<b>Pedestrian Zambia</b>	337
<b>Total</b>	4128



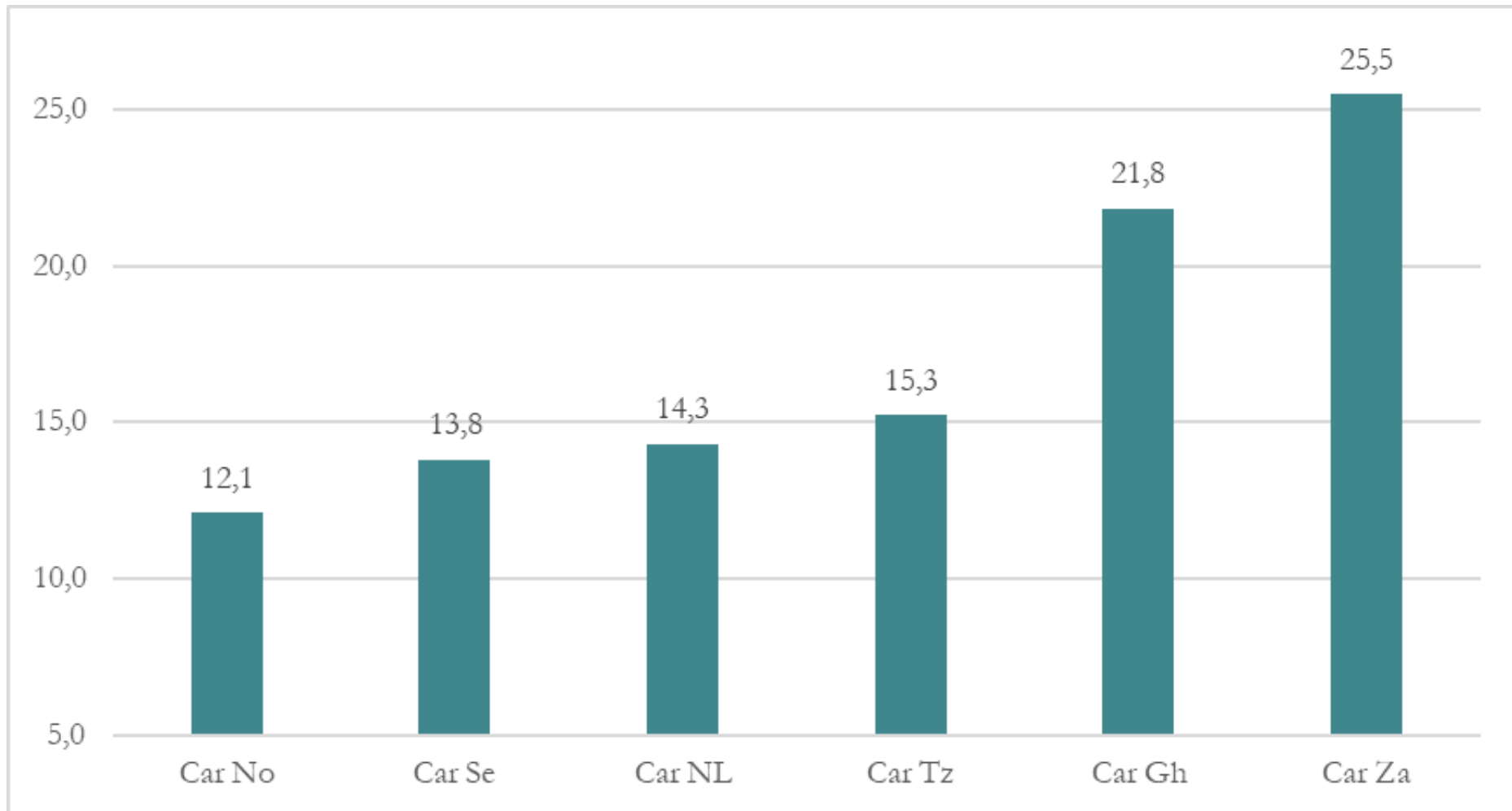
# 1) Compare accident involvement



## 2) Compare road safety behaviours

- **Become angered by a certain type of driver and indicate your hostility by whatever means you can**
- **Sound your horn to indicate your annoyance to another road user**
- **Pull out of a junction so far that the driver with right of way has to stop and let you out**
- **Drive when you suspect you might be over the legal blood alcohol limit**
- **Drive without using a seat belt**
- **Race away from traffic lights so you can get in front of the driver next to you**
- **Become angered by another driver and give chase with the intention of giving him/her a piece of your mind**
- **Overtake a slow driver on the inappropriate side**
- **Don't stop for pedestrians at pedestrian crossings**
- **Overtake a vehicle when you do not have a clear view of the oncoming traffic (e.g. before bends, hill tops)**

# Ten items combined into a sum-score index: (min: 7 points, max= 70)



### 3) Compare elements of national RSC among car drivers and pedestrians in European and African countries

■ We have three conceptualizations of road safety culture:

- 1) **Descriptive norms:** “When driving/walking on roads in my country, I expect the following behaviour from other drivers:”
- 2) **Fatalistic beliefs** related to road safety
- 3) **Values/attitudes related to individual freedom** to take risk and paternalism

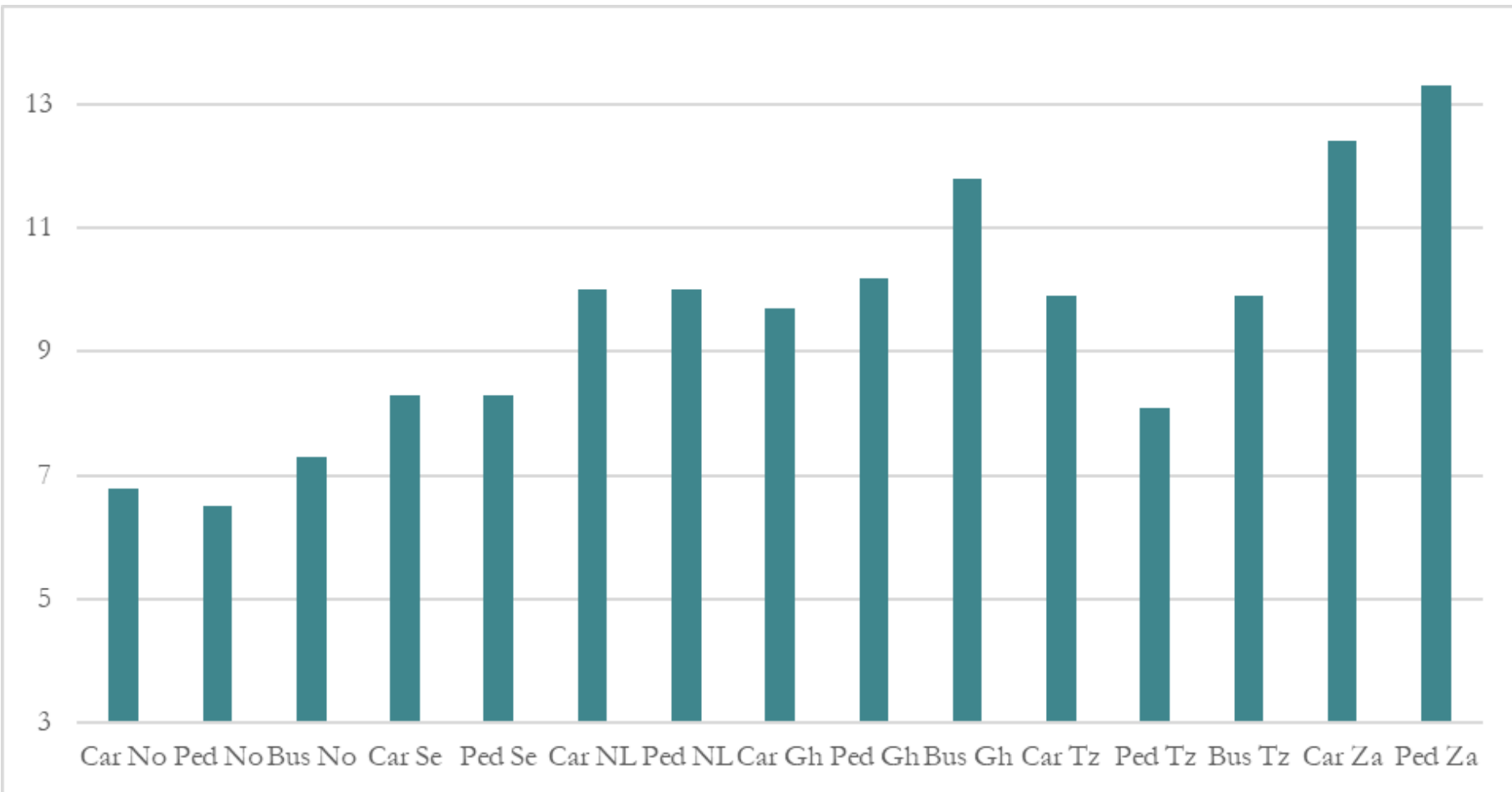
And also important: What are the mechanisms between elements of RSC and road safety violations?

- A. Descriptive norms:** Subtle social pressure to act as others in your reference group does.
  
- B. Fatalistic beliefs:** if your fate is predestined, what you do (i.e. risk taking) will not make a difference
  
- C. Attitudes focusing on freedom to take risk:** “it is my right to do whatever I want, e.g. refrain from using seatbelt, speeding” (“it is not risky for me”) For example: right wing representatives burning face masks during COVID-19. Seat belt as a violation of human rights.

## A) Descriptive norms: “When driving/walking on roads in my country, I expect the following behaviour from other drivers:”

- That they become angered by a certain type of driver and indicate their hostility by whatever means they can
  - That they sound their horn to indicate their annoyance to another road user
  - That they overtake a slow driver on the inappropriate side
  - That they drive when they suspect they might be over the legal blood alcohol limit
  - That they drive without using a seatbelt
- Combined into sum-score index (min: 5, maximum: 25)

# Descriptive norms index:

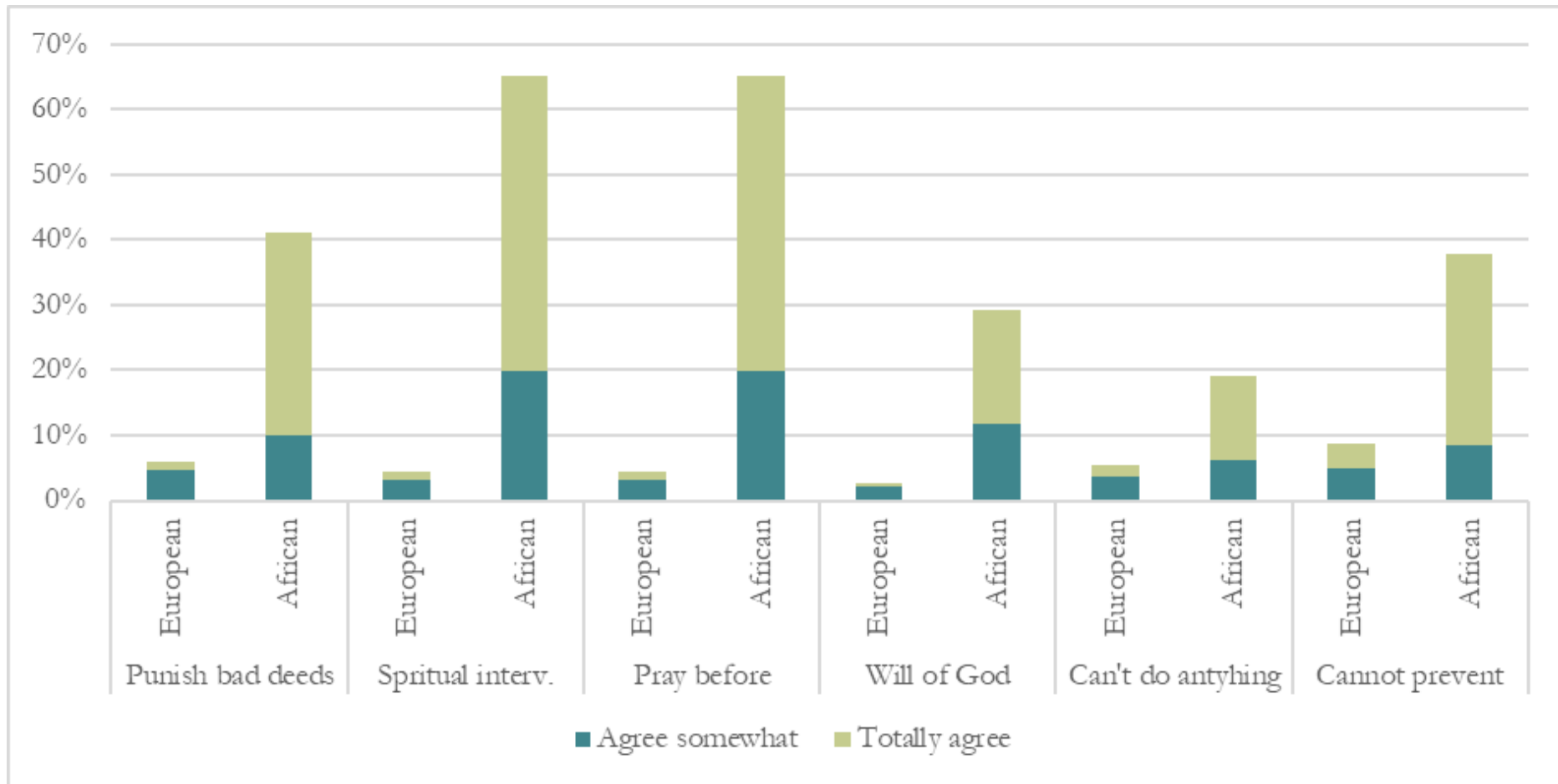


## B) Fatalistic beliefs regarding road safety:

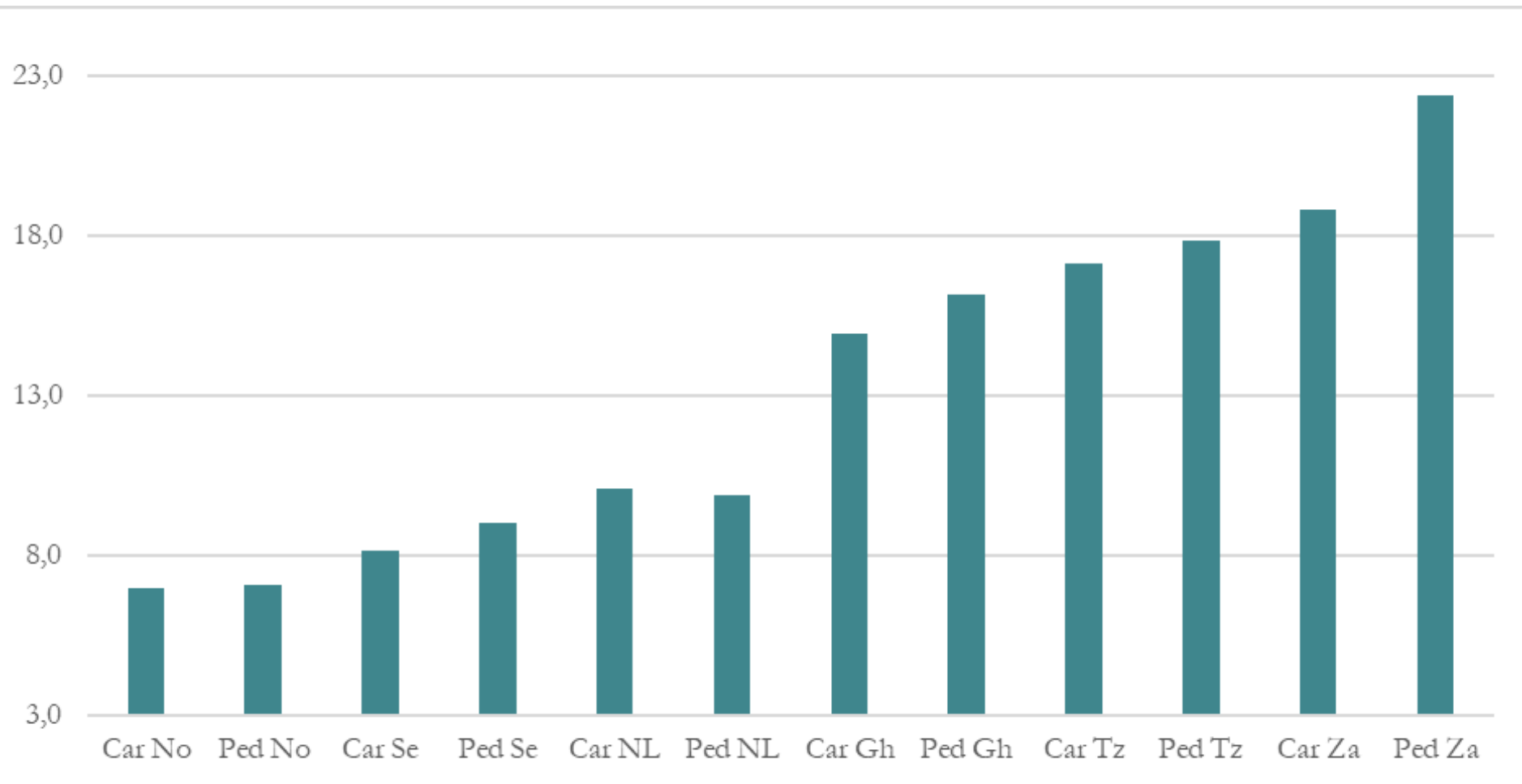
- I believe that some people die in road crashes as punishment for some bad deeds
- I believe that spiritual intervention, such as prayers, can prevent road crashes
- I pray before embarking on a journey
- I believe that road crashes are the will of God
- Human beings cannot do anything to prevent people from dying in traffic
- People cannot prevent their own death (e.g. in road crashes), they die when it is their time to die



# Proportions who agree:



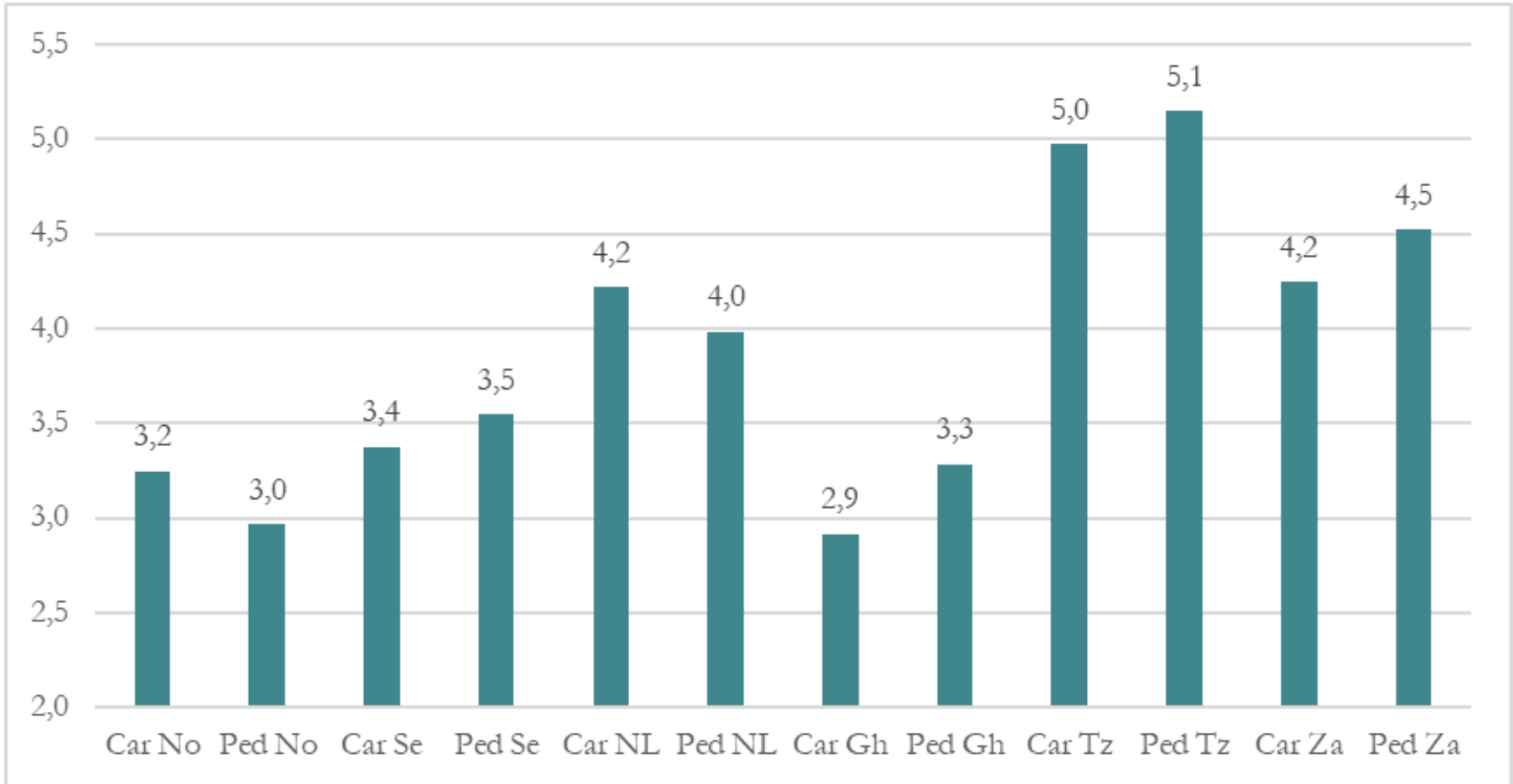
# Six statements combined into a sum score index (min: 6, Max 30)



## C) Values/attitudes related to individual freedom to take risk

- Drivers should be able to do whatever they want in traffic, as long as they do not expose others to risk
- A skilled driver can take more risks than others
- **We also have a question about paternalism:**
- The authorities should make it more difficult for drivers to engage in risky behaviour in traffic (e.g., by lowering speed limits, increasing police enforcement)

# Sum score index based on two items:



## 3a) Examine the factors influencing accidents focusing especially on different elements of national RSC

Variable	Mod. 1	Mod. 2	Mod. 3	Mod. 4	Mod.5	Mod. 6	Mod. 7	Mod. 8	Mod. 9
Km's driven last two years	<b>1.000*</b>	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Gender (Male=0, Female=1)		<b>.659***</b>	<b>.646***</b>	<b>.663***</b>	<b>.681***</b>	<b>.711***</b>	.852	.832	.830
Age (>26=0, <26=1)			<b>2.126***</b>	<b>1.821***</b>	<b>1.737***</b>	<b>1.685***</b>	<b>1.652***</b>	<b>1.523**</b>	<b>1.516**</b>
Experience (0=>20years, 1=>20 years)				<b>.451***</b>	<b>.442***</b>	<b>.457***</b>	<b>.679**</b>	<b>.710*</b>	<b>.713*</b>
Education (University=1, Other=0)					<b>.699***</b>	<b>.696***</b>	<b>.638***</b>	<b>.600***</b>	<b>.598***</b>
Road safety <u>behaviour</u> index						<b>1.017***</b>	.993	.989	.988
European vs. African countries							<b>3.365***</b>	<b>2.089***</b>	<b>2.098***</b>
Fatalistic beliefs index								<b>1.064***</b>	<b>1.062***</b>
Descriptive norms index									1.008
Nagelkerke R2	.002	.012	.025	.043	.050	.055	.111	.128	.128

### 3b) Examine the factors influencing Car drivers' road safety violations, focusing especially on different elements of national RSC

Variable	Mod. 1	Mod. 2	Mod. 3	Mod. 4	Mod.5	Mod. 6	Mod. 7
Gender (Male=1, Female=2)	-.110***	-.112***	-.112***	-.100***	-.069***	-.057***	-.014
Age (>26=1, <26=2)		.062***	.062***	-.002	-.018	-.029	-.031*
Education (University=1, Other=0)			.002	-.017	-.029	-.029	-.032*
Descriptive norms index				.528***	.429***	.394***	.372***
Fatalistic beliefs index					.244***	.224***	-.014
Freedom to take risk attitudes						.169***	.207***
European vs. African							.343***
Adjusted R2	.012	.015	.015	.289	.337	.363	.417

## 5) Examine and discuss the factors influencing the different elements of national RSC

- A. Descriptive norms:** Created in interaction, influenced by: road infrastructure, enforcement, training, composition of road users, economy, degree of urban planning, existence of a well functioning public transport system
- B. Fatalistic beliefs:** Integrated and deep-seated part of religious views and related to religion.
- C. Attitudes focusing on freedom to take risk and paternalism:** Integrated and deep-seated part of ideological and political views.

## 6) Discuss how to influence elements of RSC to improve road safety in the African and the European context.

- A. Descriptive norms:** **Can we influence:** interaction, road infrastructure, enforcement, training, composition of road users, economy, degree of urban planning, existence of a well functioning public transport system.
  
- B. Fatalistic beliefs:** **Can we influence:** deep-seated part of religious views and related to religion? Perhaps priests and imams should work with this.
  
- C. Attitudes focusing on freedom to take risk and paternalism:** **Can we influence:** deep-seated part of ideological and political views? Perhaps politicians and political parties?