

### **LISBON** 2022

# Effectiveness of interventions from the H2020 i-DREAMS project: A sneak preview

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#### **Evaluation Framework of Interventions**



**i DREAMS** 

Outcome Evaluation Events/100km Before – After App usage and Engagement patterns Process Evaluation



#### Outcome Evaluation - Summary Statistics

Phases	Belgian drivers_1 (n=26)			Belgian drivers_2 (n=22)			UK drivers (n=25)			
	Trips	Distance Travelled (Km)	Events /100km (std.dev)	Trips	Distance Travelled (Km)	Events /100 km (std.dev)	Trips	Distance Travelled (Km)	Events /100km (std.dev)	
Phase 1	1885	24,216	287.55 (125.81)	1763	25,381	<b>264.15</b> (122.27)	2196	28,794	<b>368.66</b> (241.49)	
Phase 2	1837	25,375	317.05 (145.49)	1603	21,711	242.47 (116.13)	2414	26,326	<b>323.74</b> (189.82)	
Phase 3	1687	23,429	326.55 (131.12)	1495	21,836	242.79 (125.91)	2470	27,770	<b>293.69</b> (185.52)	
Phase 4	2399	34,531	315.82 (159.75)	2120	31,659	<b>216.96</b> (140.38)	3222	41,361	<b>280.30</b> (181.35)	
Total reduction in events/100km from phase 1 (%)					17.86%			23.96%		

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\*Events/100km are mentioned as total events occurred for all risk indicators (POs) in danger and avoidable accidents phases of the STZ

#### REAMS **Outcome Evaluation - Vehicle Control** D TRANSPORT RESEARCH ARENA **LISBON** 2022 Belgium\_cars\_1 Vehicle\_Control (STZ: Avoidable Accident) Vehicle\_Control (STZ: Dangerous) Belgium\_cars\_1 ■Belgium\_cars\_2 Belgium\_cars\_2 ■UK\_cars ■ UK\_cars 102 108 108 109 Events/100km 15 10 Events/100 Km <sup>17</sup> 16 Phases Phases

#### Related-Samples Wilcoxon Signed Rank Test

Vehicle Control – Avoidable Acc	cident (UK Cars +	Belgium Cars 2)
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			,
Sig.	Phase 1	Phase 2	Phase 3
Phase 1			
Phase 2	0.024		
Phase 3	0.010	0.731	
Phase 4	<0.001	0.015	0.098



#### **Related-Samples Wilcoxon Signed Rank Test** Speed – Avoidable Accident (UK Cars + Belgium Cars\_2)

Sig.	Phase 1	Phase 2	Phase 3
Phase 1			
Phase 2	0.050		
Phase 3	0.001	0.122	
Phase 4	<0.001	0.037	0.341



#### Road Sharing– Avoidable Accident (UK Cars + Belgium Cars 2)

Sig.	Phase 1	Phase 2	Phase 3
Phase 1			
Phase 2	0.008		
Phase 3	<0.001	0.072	
Phase 4	<0.001	<0.001	0.039

# TRANSPORT RESEARCH ARENA LISBON 2022

#### Process Evaluation: Summary Statistics



	Belgium cars W1 (N=26 drivers)		Belgium Cars W2 (N= 23 drivers)		UK Cars (N= 24 drivers)			
Functionalities within the app	N	Percentage	N	Percentage	Ν	Percentage		
Open the app	1127	32.79%	1641	31.52%	2204	34.18%		
Open the trend menu	38	1.11%	68	1.31%	87	1.35%		
Open the goal menu	202	5.88%	377	7.24%	519	8.05%		noals
Join a goal	71	2.07%	156	3.00%	138	2.14%		goure
Open the con menu	116	3.38%	141	2.71%	141	2.19%		
Open the fact menu	247	7.19%	321	6.16%	425	6.59%		
Open the pro menu	122	3.55%	163	3.13%	160	2.48%		
Open the tip menu	155	4.51%	209	4.01%	240	3.72%		
Open the leaderboard menu	158	4.60%	362	6.95%	910	14.11%	<b>→</b>	leaderboa
Open the message menu	198	5.76%	230	4.42%	224	3.47%		
Open the scores menu	334	9.72%	497	9.54%	432	6.70%	<b>→</b>	score
Open the trip menu	669	19.46%	1042	20.01%	968	15.01%		trips
Grand Total	3437	100.00%	5207	100.00%	6448	100.00%		- inpo

BC : Wave 1 Open app: N= 1127 Total interactions: N= 3437

BC: Wave 2 Open app: N= 1641 Total interactions: N= 5207

UKC Open app: N= 2204 Total interactions: N= 6488



#### Process Evaluation – App Engagement (1)







#### Total app visits

REAMS



Total visits

Days

Belgian car drivers Wave 1

**Belgian car drivers Wave 2** 

UK car drivers



**Belgian car drivers Wave 1** 

**Belgian car drivers Wave 2** 

**UK car drivers** 







Belgium car drivers, wave 2 and UK car drivers show more consistent results

 – especially events/100km are reduced significantly from phase 1 to phase 4
 for Avoidable accident STZ.

REAMS

- Significance results showing vital role of gamification features within i-DREAMS App, which are active in Phase4.
- Considerable app usage of drivers has been noticed (more popular features : goals, trips , leaderboard and scores) and following the expected patterns of App visits.



#### **Future Works**

- Evaluation of Interventions
  - Other modes (Trucks, Buses)
  - Countries (Greece, Germany, Portugal)

- More Rigorous analysis
  - ANOVA (Repeated Measures)
  - Incorporating Socio-demographic and psychological factors (Questionnaire data)

**i DREAMS** 

• Dose-Response Analysis



# Thank you!

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