

AVAS ZOÉ SURVEY JULY_AUGUST 2016



DEA-TPA – T. SCHMITT
DEA-TR – F. SILVANI

31/08/2016

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GROUPE RENAULT

- **Current AVAS on ZOE (pure electric vehicle)**

- Fitted 100% since starting of sales in 2013
- In compliance with the UN-ECE R138-00
 - Sound emitted in forward and reversing mode
 - No stationary sound
 - Pause switch with information of the status of AVAS to the driver
 - Selectable sounds (listen next slide)



- **Sample of sounds designed by IRCAM (Institut de Recherche et Coordination Acoustique Musique) in Paris**
- **With acceleration and deceleration:**

Basic



Glam



Sport



<https://soundcloud.com/renaultze>

At 10km/h steady:



Renault for Zoe → questionnaire :

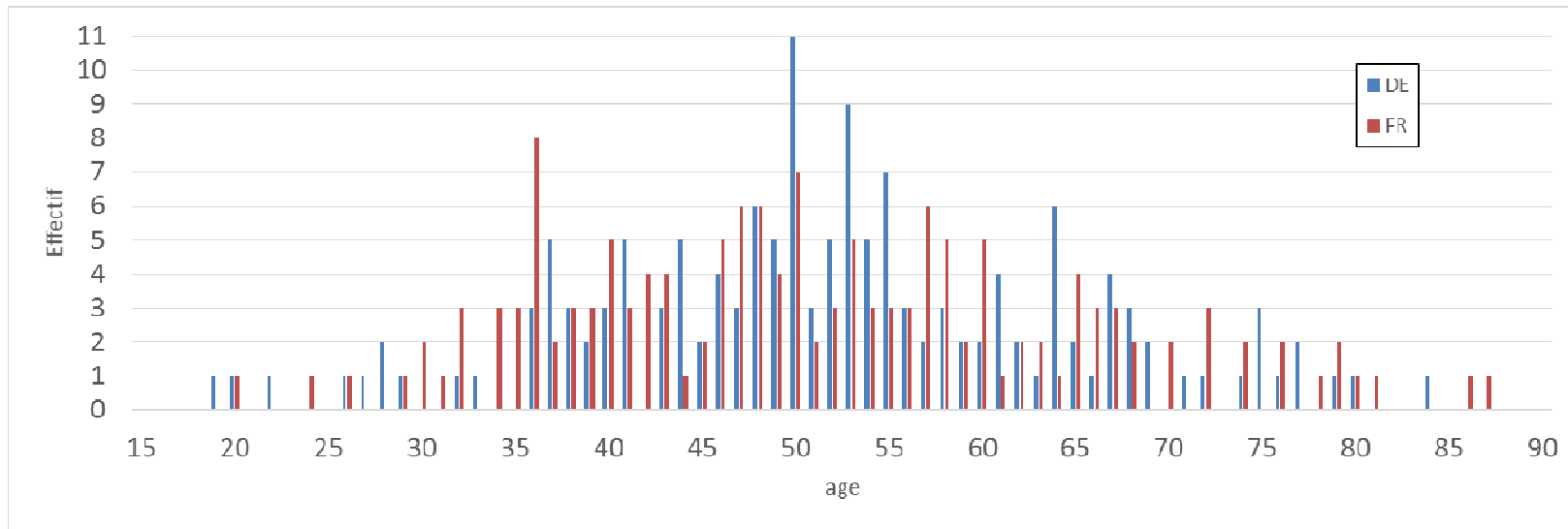


Questionnaire

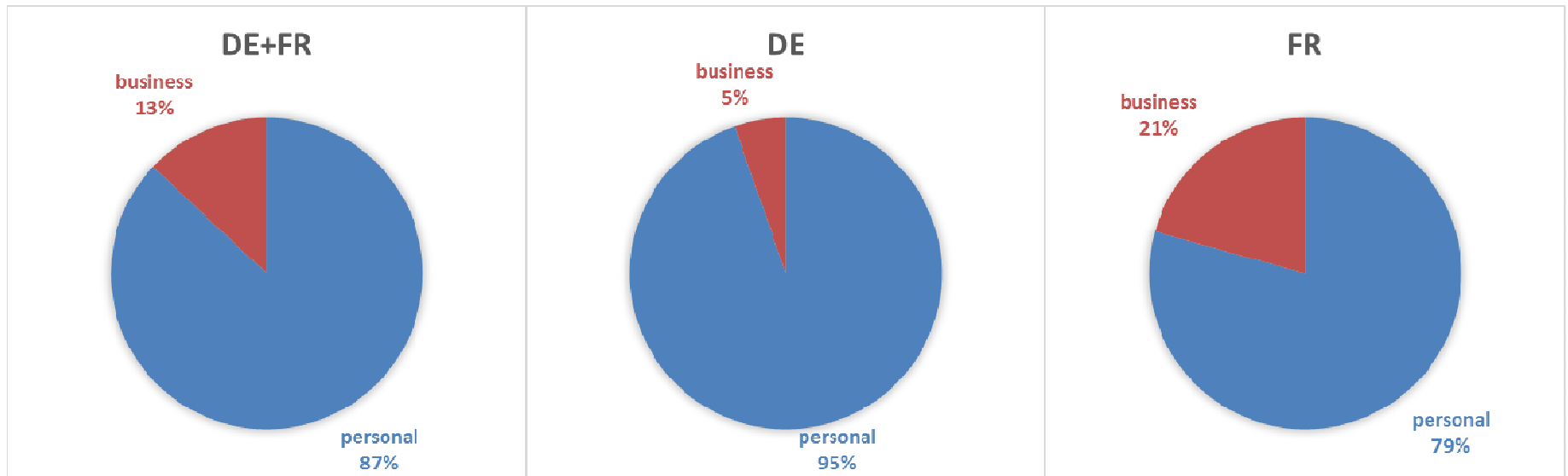


Sample

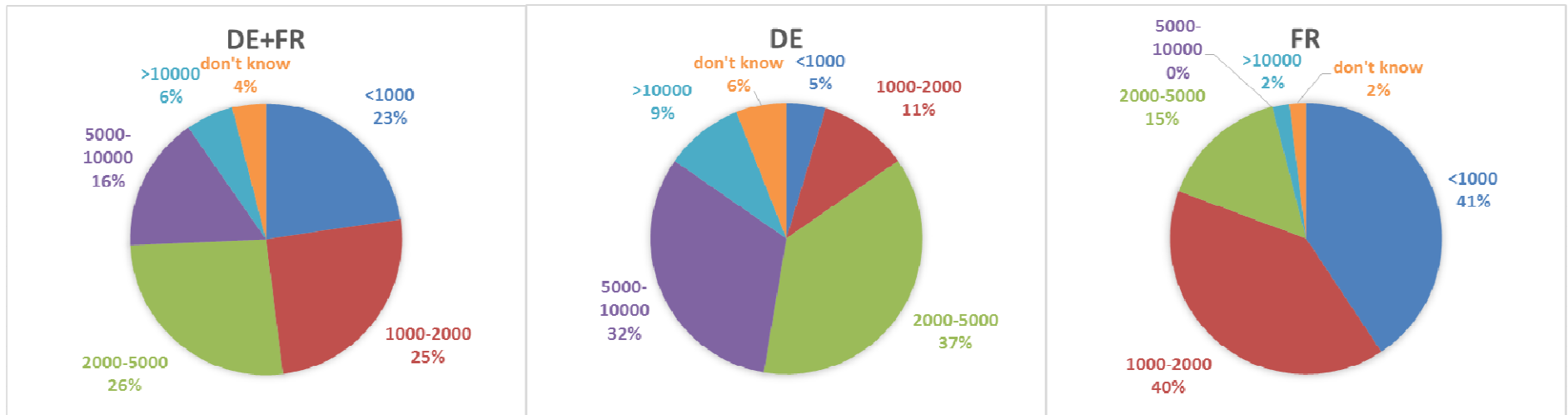
- 300 people – Renault ZOE customers
- 150 France, 150 Germany
- Age average 52 years (same in the 2 countries)
- 209 men, 91 ladies (Germany: 113 / 37 - France: 96 / 54)



Utilisation privé / professionnelle *Private / Professional use (Q1)*



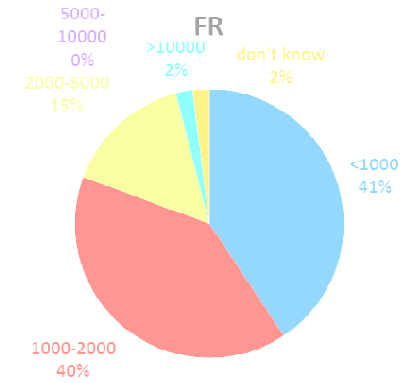
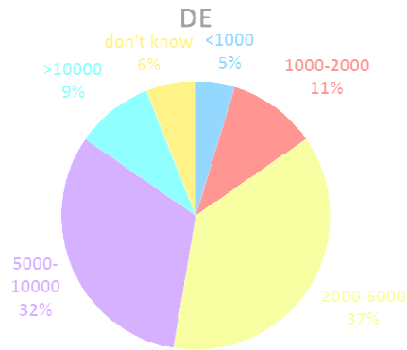
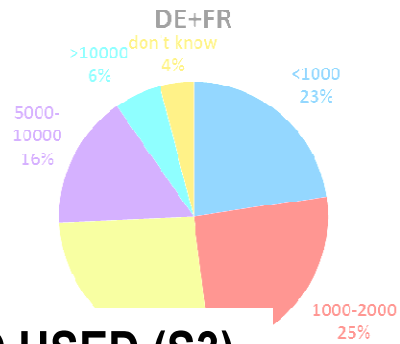
COVERED DISTANCE(Q2)



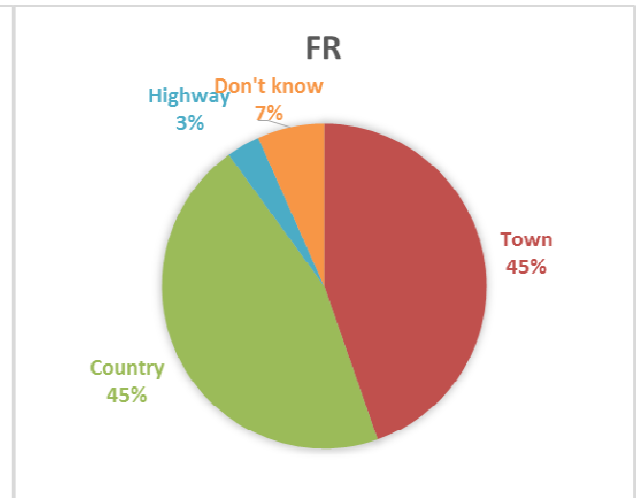
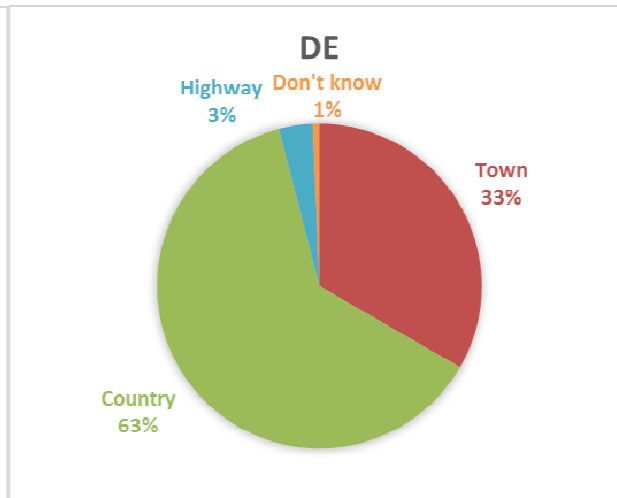
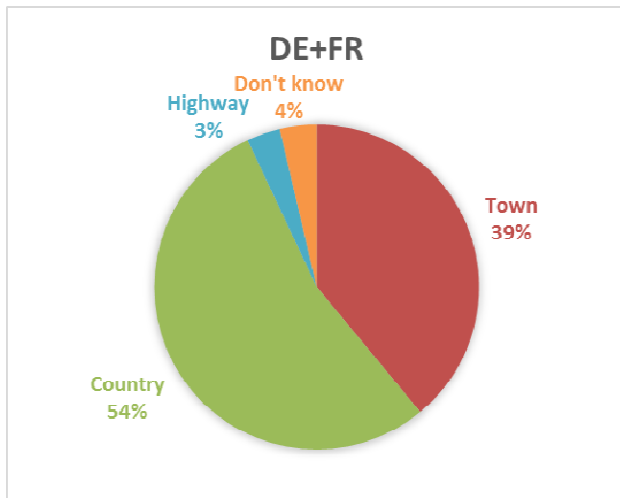
Average distance (km) = 4000 km (DE 5400km / FR 2600km)



COVERED DISTANCE(Q2)



TYPE OF ROAD USED (S3)



MOTIVATION TO BUY ZOE (Q3, several answers possible)

DE+FR

- Environment (69%)
- Economic (37%)
- Autonomy (22%)
- Innovation (22%)
- Easy (18%)
- Quiet (12%)

DE

- Environment (71%)
- Economic (28%)
- Innovation (27%)
- Autonomy (16%)
- Easy (11%)
- Quiet (7%)

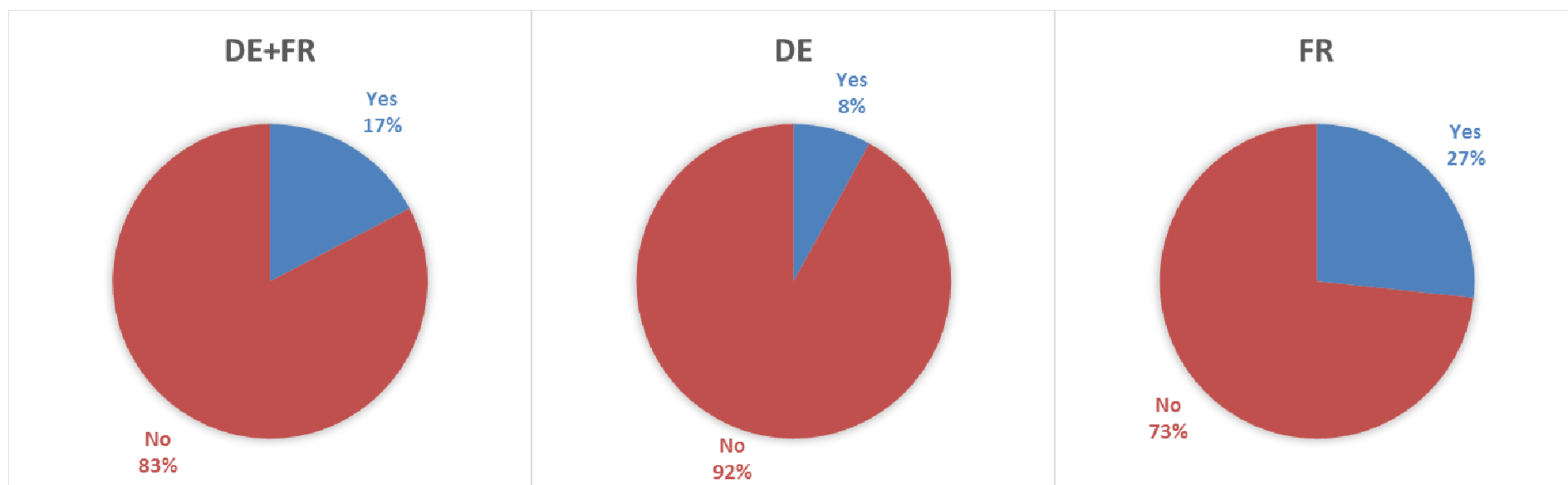
FR

- Environment (67%)
- Economic (46%)
- Government aid (31%)
- Autonomy (29%)
- Easy (25%)
- Quiet (17%)
- Innovation (17%)
- Performance (16%)



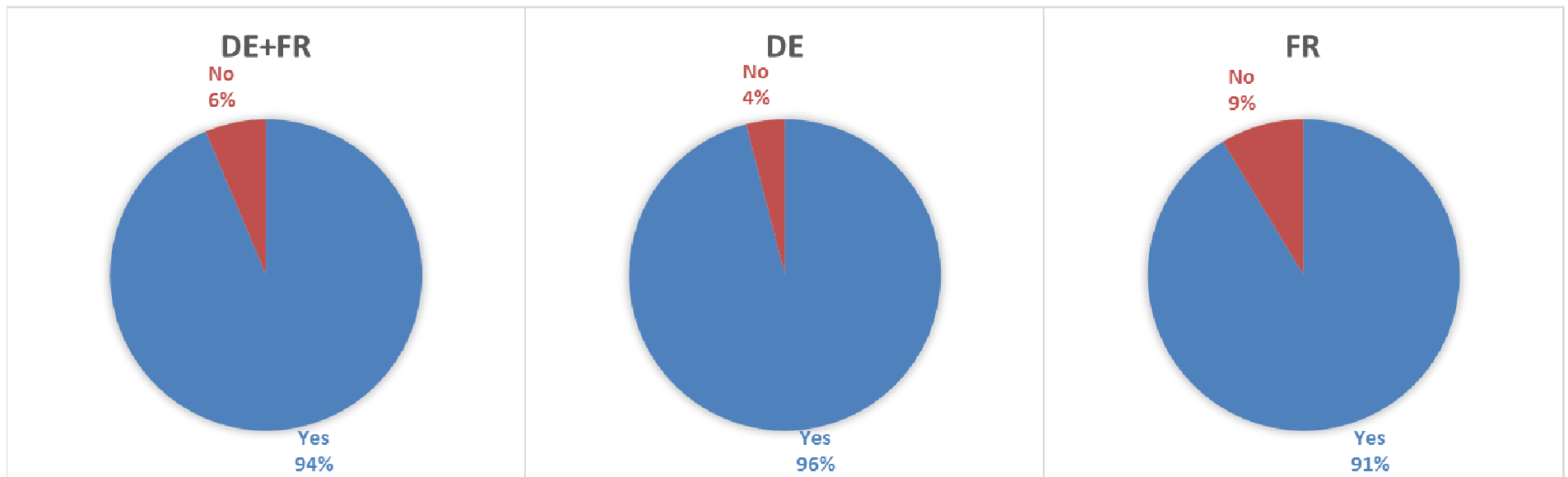
DANGEROUS SITUATIONS (Q4)

- *Did you ever experience that pedestrians or cyclists did not detect the presence of your car ?*



Connaissance de Z.E Voice (Q5)

- Your vehicle is equipped with a device called “ZE.Voice” which emits a sound outside the vehicle to warn the pedestrians and the cyclists passing vehicle in certain driving conditions. Did you know?*

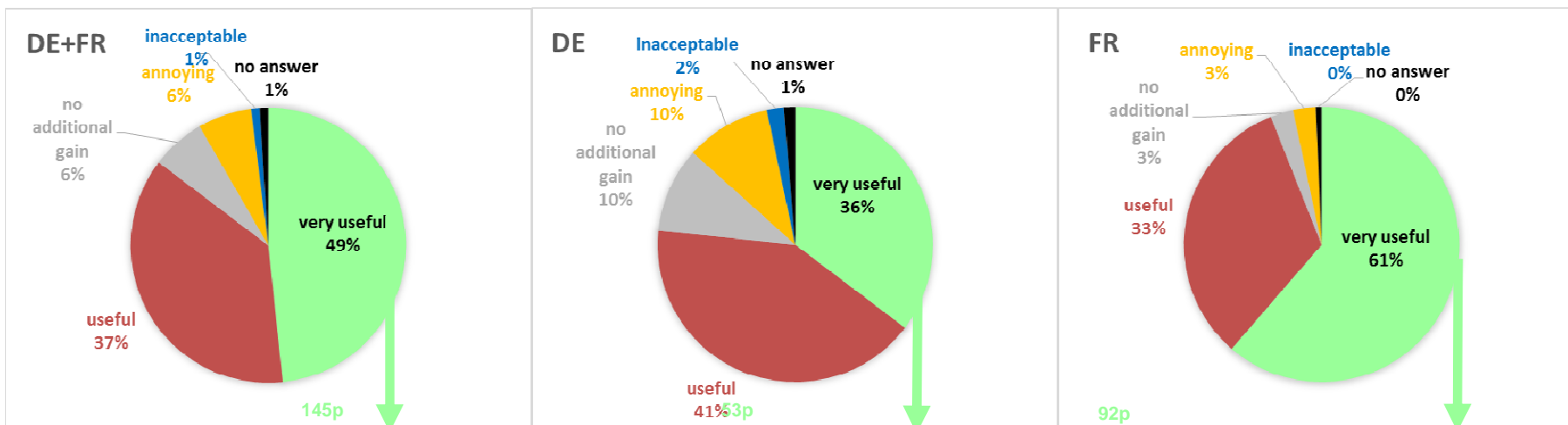


How do you have information? (Q6, if Z.E Voice known, several answers possible)

	DE+FR	DE	FR
1. Someone informed you	69%	58%	81%
2. You read if (owner manual, Internet, ...)	33%	42%	24%
3. You did realized/ You heard while driving	30%	42%	17%



NEED OF Z.E Voice (AVAS) (Q7)



- This device emit a sound only for low speeds (less then 35km/h). Do you think it is sufficient? (Q8)**
 DE+FR : **72 % Oui** (DE : 83 % - FR : 66 %)
 → **up to what speed would you like that this sound is emitted?**
 80% support Up to 50 km/h (10% jusqu'à 40 ou 45 ; 10% jusqu'à 60 km/h)
- Do you think that the sound is loud enough to alert pedestrians and cyclists? (Q9)**
 DE+FR : **57 % Oui** (DE 62%-FR 53%) / 30% No / 13% do not know/ no answer



PAUSE SWITCH: Knowledge (Q10) et Frequency of use (Q11)

Your vehicle is equipped with a pause switch of the « ZE Voice » device.

Do you know? Do you use it?



Global Use Rate: 37 % (DE 50% - FR 24 %)



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sometimes,
0%
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WHEN DO YOU USE THE PAUSE SWITCH (Q12, several answers possible)

DE+FR

- Residential area (47%)
- Daytime (30%)
- Night time (28%)
- Traffic jam (16%)
- Everytime (12%)

DE

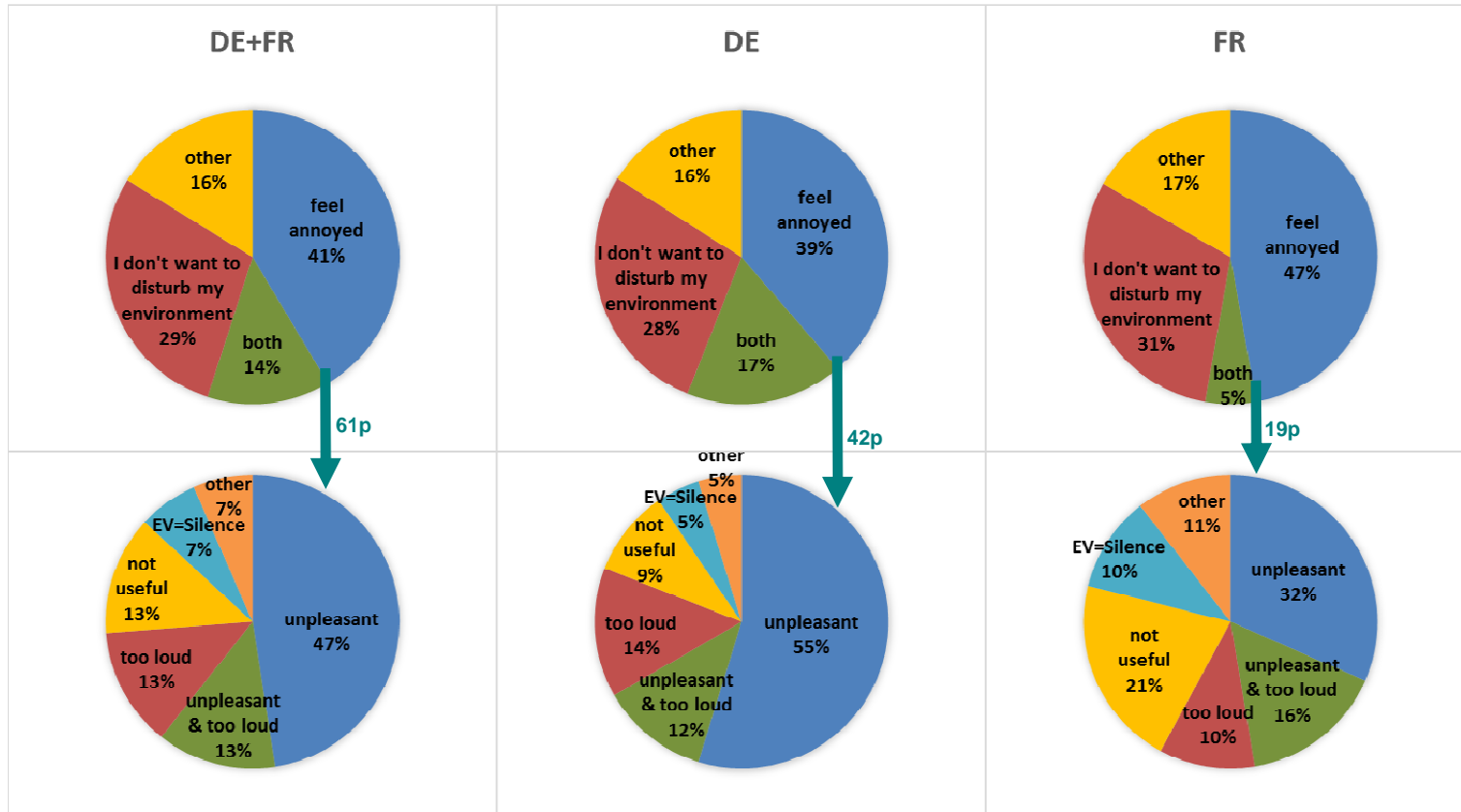
- Residential area (48%)
- Night time (23%)
- Traffic jam (15%)
- Everytime (15%)
- Daytime (13%)

FR

- Daytime (62%)
- Residential area (46%)
- Night time (38%)
- Traffic jam (19%)
- Everytime (8%)



WHY DO YOU USE THE PAUSE SWITCH? (Q13, if used) (Q14, if annoying)



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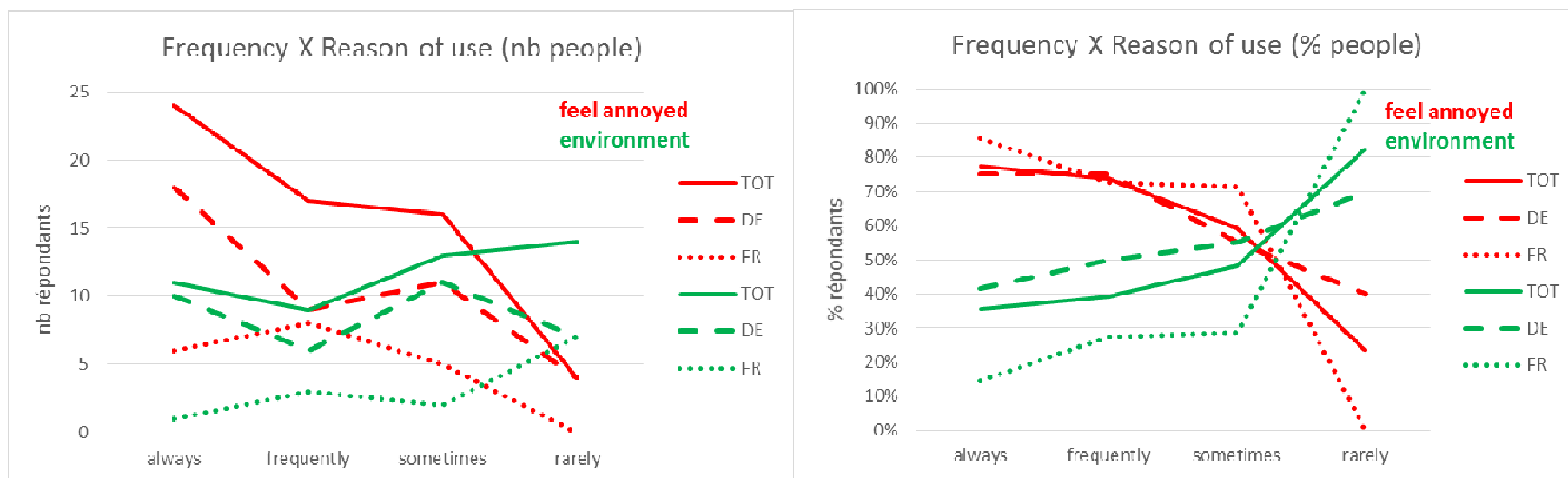
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PAUSE SWITCH

Frequency of use of the Pause switch (Q11) X Reason of use of the Pause switch (Q13)

- People who often use the pause switch are people annoyed by the sound
- People who rarely use the pause switch are people concerned about their environment



AVAS STATUS INDICATOR: Knowledge/ Utility/ Visibility (Q15/16 if pause switch used)

	Noticed light	If noticed	
		Useful	Visible
DE+FR	77% 85p	74% 63p	33% 28p
DE	83% 62p	76% 47p	27% 17p
FR	64% 23p	70% 16p	48% 11p

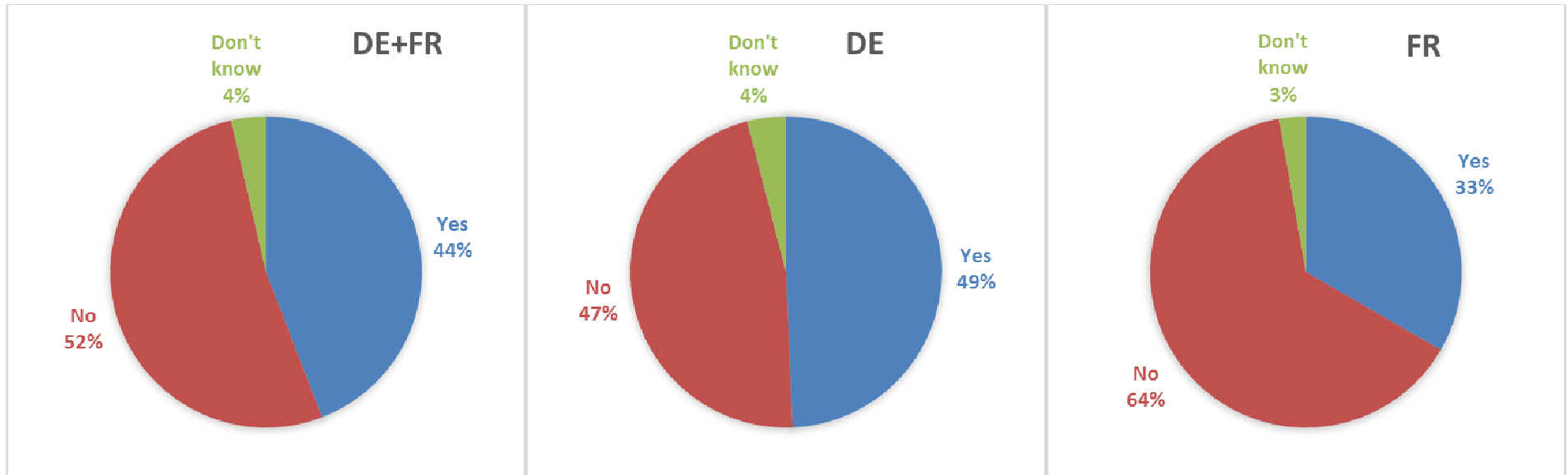
People who consider the indicator not useful, do not look it
1/3 of people considering the indicator useful, find it enough visible



PAUSE SWITCH / DEACTIVATION SWITCH (Q17, if pause switch used)

The system is automatically reactivated after an engine stop.

Would you like no reactivation?

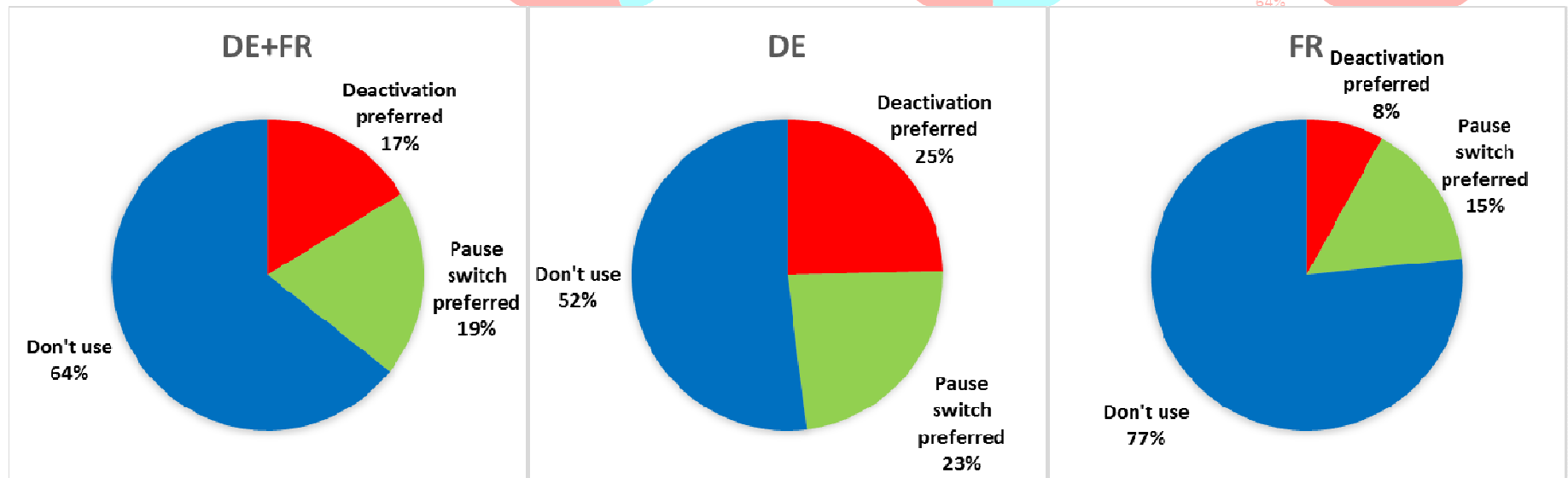
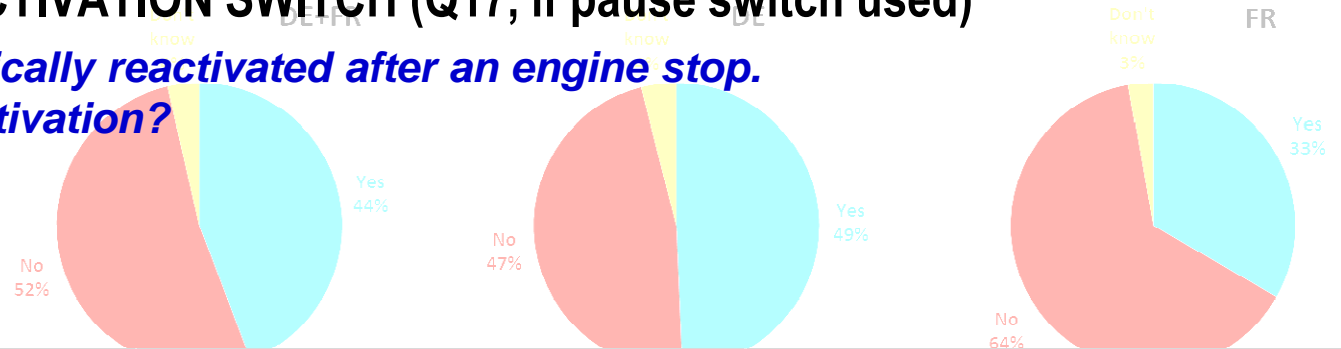


In total (for 300 people), 16% (DE 25% - FR 8%) would like to have a Deactivation switch instead of a Pause switch among the 37% (DE 50% - FR 24%) of people using currently the Pause switch



PAUSE SWITCH / DEACTIVATION SWITCH (Q17, if pause switch used)

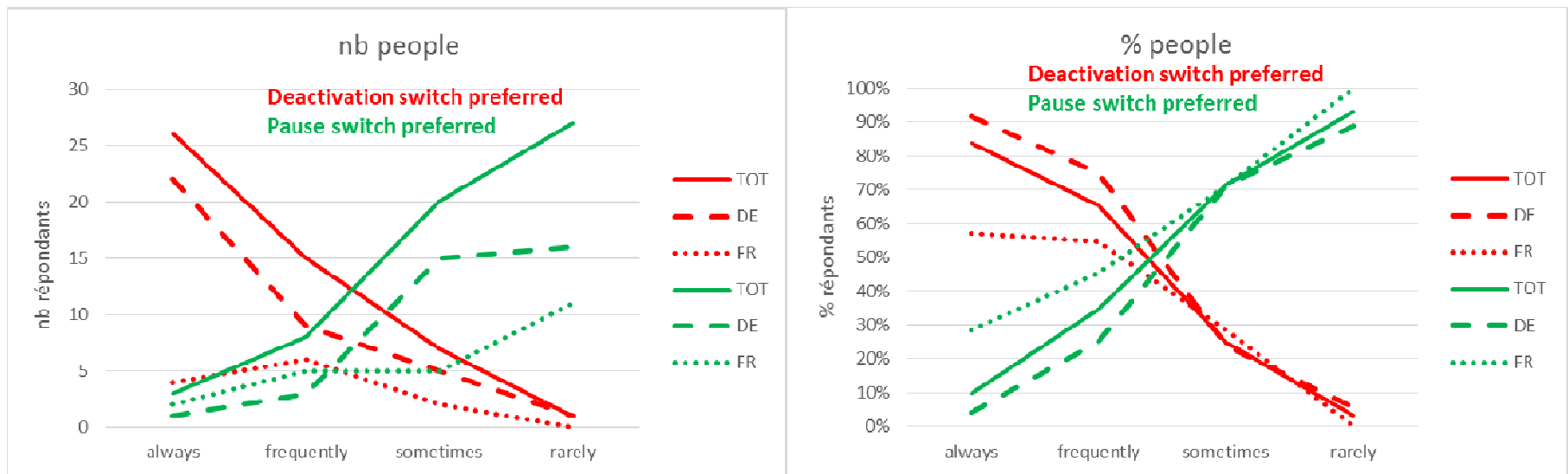
*The system is automatically reactivated after an engine stop.
Would you like no reactivation?*



PAUSE / DEACTIVATION SWITCH:

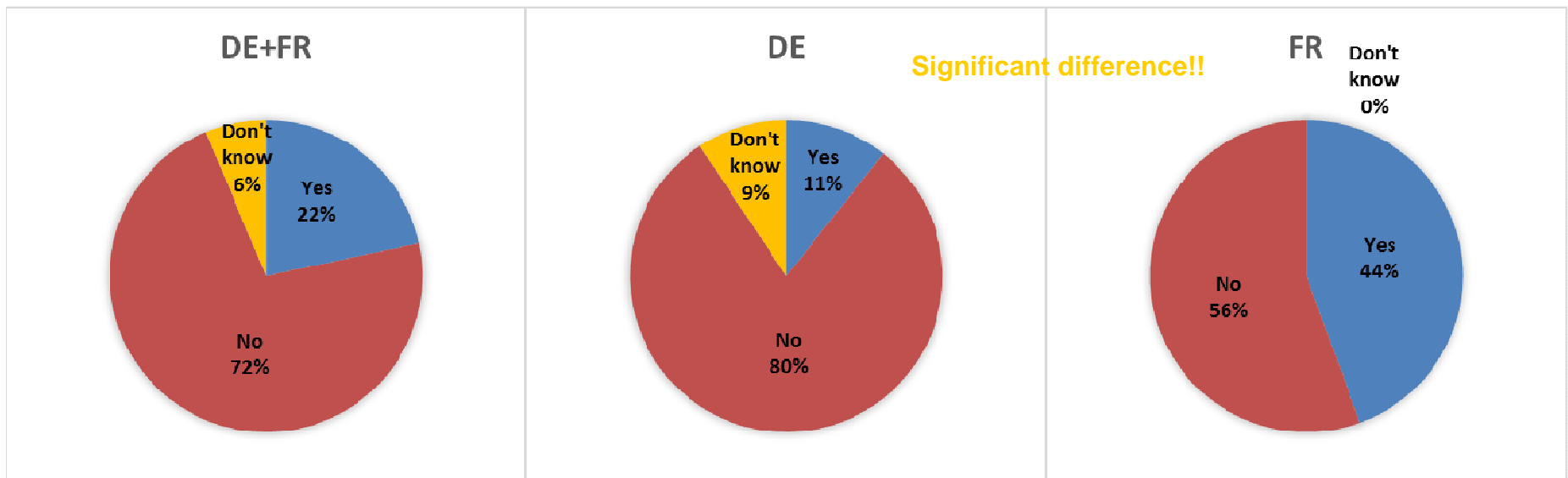
Frequency of use of the the Pause switch (Q11) X Deactivation switch (Q17)

- The « Deactivation switch » is preferred for people using always or often the Pause switch
- The « Pause switch » with automatic reactivation after an engine stop is preferred by people using sometimes or rarely the Pause switch



ATTENUATION instead of PAUSE SWITCH (Q18, if Pause switch used)

Would you prefer an attenuation of the emitted sound rather than a complete deactivation?

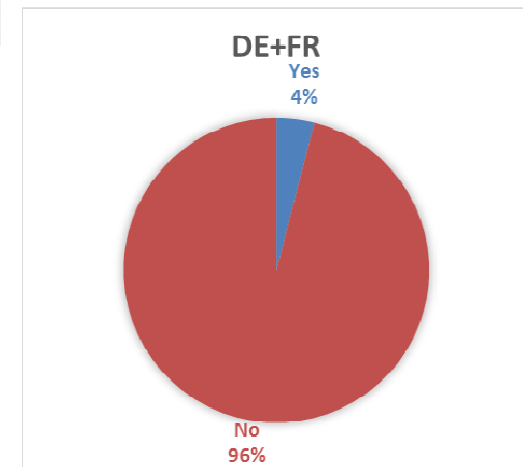


STATIONARY SOUND (Q19/20)

The sound emitted outside the vehicle is cut when it is stationary, engine running (traffic light, stop, ...). Would you like to have a sound at standstill?

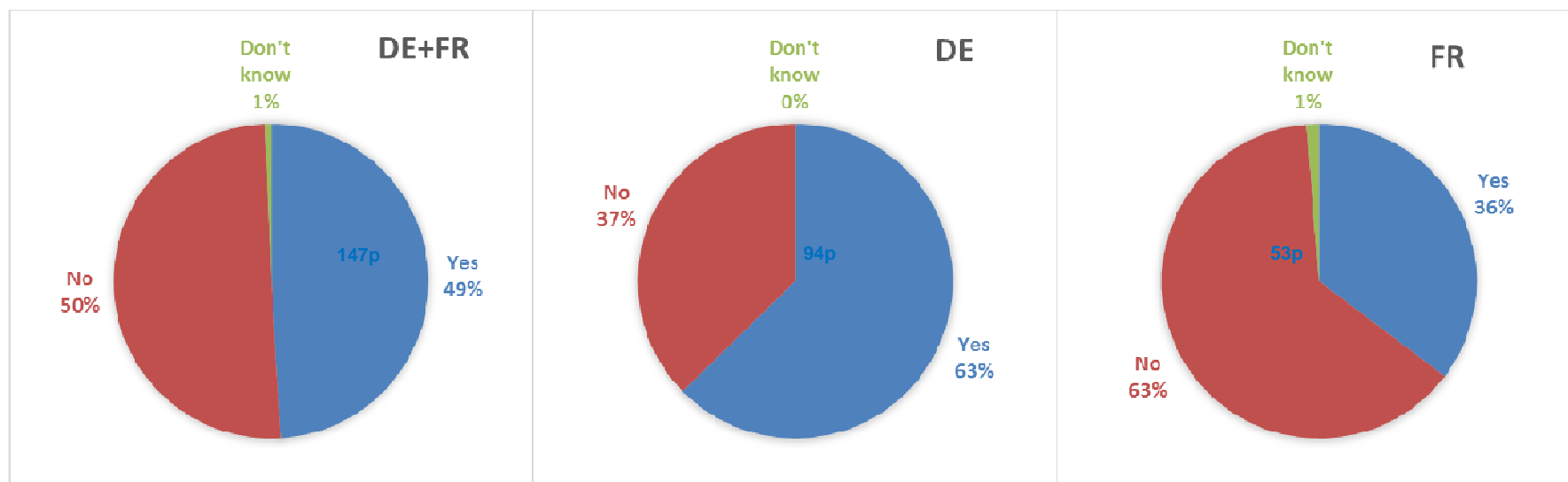


Do you experienced problems with pedestrians while you were stationary but willing to start to move?



SELECTABLE SOUND (Q21/22/23)

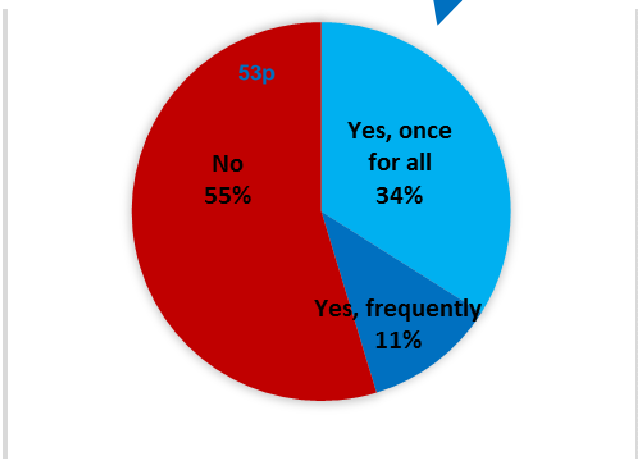
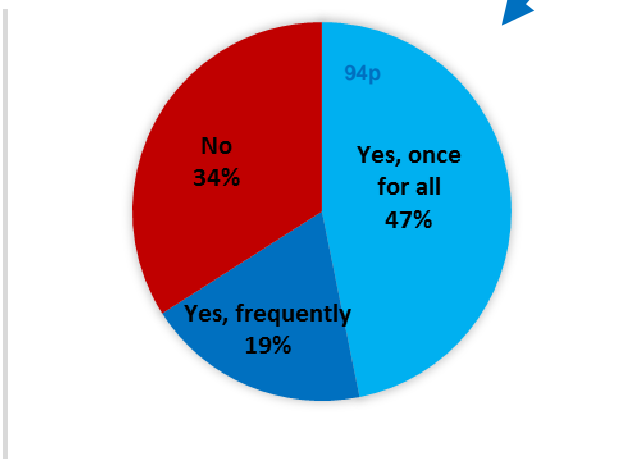
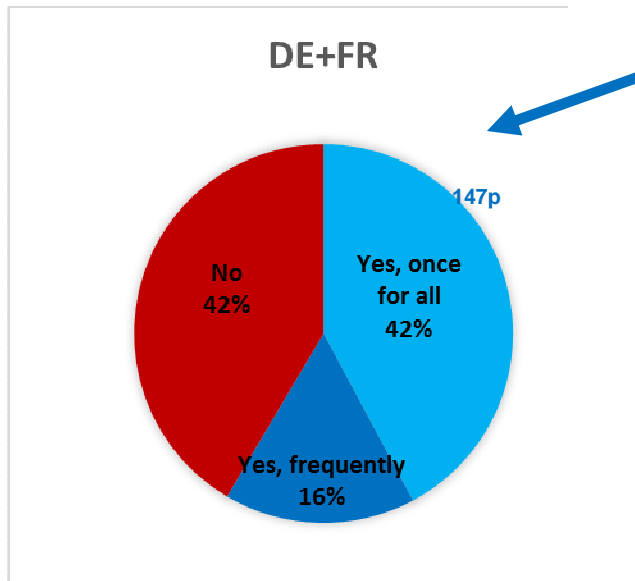
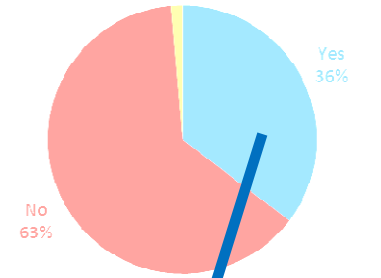
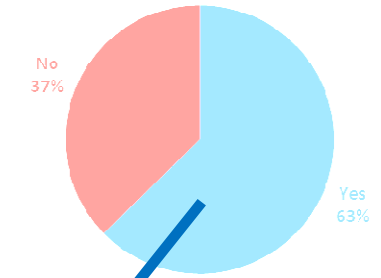
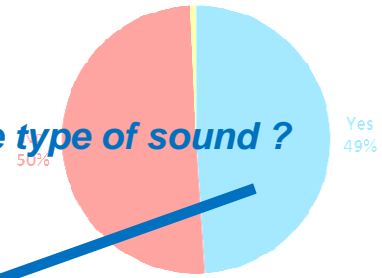
You have the choice between 3 types of sound, selectable with a long pressure on the activation/deactivation button, do you know?



SELECTABLE SOUND (Q21/22/23)

You have the choice between 3 types of sound, selectable with a long pressure on the activation/deactivation button, do you know?

Do you already have change the type of sound ?



SELECTABLE SOUND (Q24, if frequently change, several answers possible)

- *Why do you frequently change the type of sound ?*

DE+FR

- **It is fun to change (50%) : DE 39% (7 people/ 12) ; FR 83% (5 people/ 6)**
- **According to the driver (17%)**
- **According to the mood (17%)**



SYNTHESIS

- **95% know that the ZOE is equipped with the AVAS « Z.E Voice »**
- **27% FR / 8% DE knew dangerous situations where pedestrians or cyclists did not hear their vehicle**
- **85% consider the AVAS useful and even necessary**
- **90% do not want stationary sound (95% do not meet problem)**
- **Pause switch:**
 - 70% do not use (25% do not know, 40% know but do not deactivate, 5% only to try)
 - 20% deactivate but not always, because the sound is annoying, but also not to disturb the environment
 - 10% always deactivate, especially because the sound is annoying (unpleasant)
 - Indicator: noticed by 77% of the pause switch users, among who 74% consider the indicator useful, but only 33% consider this indicator enough visible
 - 25% DE / 8 % FR prefer deactivation instead of pause switch
- **Selectable sound:**
 - 70 % do not use this possibility (50% do not know, 20% know but do not change)
 - 20% changed the sound once for all
 - 10% frequently change the sound, mostly for fun



THANK YOU



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