Questionnaire Surveys about Quiet Vehicle Sounds

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Outline of the Survey

• Date: January 2011

• Location: Munich, Germany
  - (parallel survey was also carried in Fukuoka, Japan)

• Target: member of Institute of MMK/TUM and their family, employees of automotive company in Munich.

• Procedure: Questionnaire Form
Respondents

- Corrected 27 responses

**Sexuality**

- Male: 21
- Female: 6

**Age**

- 20s: 10
- 30s: 10
- 40s: 5
- 50s: 2

**Occupation**

- employed: 20
- student: 6
- other: 1
Questions: as a driver

- **Q1: Do you drive car? / Q2: How often do you drive?**

  - **Yes:** 24
  - **No:** 3

  - Everyday: 10
  - 2-3 / week: 4
  - 1 week: 7
  - 2-3 / month: 3
  - Several times a year: 2

- **Q3: What is your car’s brand and model?**

  - No hybrid and electric vehicles
Questions: as a driver — sound of your won car

- **Q4: How do you think about the sound quality of your car?**
  - Comfortable (50%), Feel nothing special (21%)

- **Q5: How do you think about the sound level of your driving sound?**

  ![Sound level chart]

- **Q6: If the driving sound becomes too quiet to be audible, how would you think?**
  - Good, because it is quiet (46%)
  - Dangerous, because it is difficult to feel the speed (29%)
Questions: as a driver — Quiet problem

• **Q7:** Have you ever felt dangerous and/or unsatisfaction due to the pedestrians’ unawareness of your driving car?

  - Yes: 7
  - No: 16

• **Q7-1:** Which time of the day?
  - What kind of road/area?
  - How much traffic?
  - How fast the traffic?
  - How did you feel?
Questions: as a driver — Quiet problem

• **Q7-1: If you have understand why pedestrian(s) did not aware your car, please describe it.**

  ➡ They were in a hurry and not aware of the traffic.

  ➡ They crossed the street without checking traffic sufficiently.

  ➡ The pedestrian underestimate the speed.

  ➡ Because my car's existence(noise) was buried within many cars and other environmental sounds.

  ➡ Mostly they are old, they are not able to hear correctly.
Questions: as a pedestrian — Quiet problem

• **Q8: Have you ever felt dangerous and/or surprise due to the unaware car approaching?**

  - Yes: 18
  - No: 9

• **Q8-1: Which time of the day?**
  - What kind of road/area?
  - How much traffic?
Questions: as a pedestrian — Quiet problem

- **Q8-1**: Chose the most applying item as a reason why you did not aware.

- car was too quiet: 2
- surrounding noise was too loud: 2
- listened music via headphones: 2
- had conversation with other: 2
- My mind was somewhere else: 12
- other: 1
Questions: as a pedestrian — Quiet problem

- **Q8-2: What kind of car was that?**

  - Ordinary vehicle propelled by gasoline or diesel engine: 3 votes
  - Hybrid or electric powered vehicle: 1 vote
  - Large size automobile: 0 votes
  - I don’t remembre: 2 votes
  - Other: 0 votes
Questions: as a pedestrian — HV/EV experience

• **Q9: Have you ever listened to the sound that the HV/EV goes slowly?**
  - Yes: 16
  - No: 11

• **Q10: Did you feel how loud the sound was?**
  - very quiet: 6
  - quiet: 8
  - middle: 1
  - loud: 0
  - very loud: 0
Japanese government has published a guideline to recommend automobile manufactures to install a sounding device to HV/EVs. Do you know this movement?

- Yes: 19
- No: 8
- Necessary: 21
- Unnecessary: 5
- No idea: 1

How do you think about the necessity of the sounding device for HV/EVs?

- Necessary: 21
- Unnecessary: 5
- No idea: 1