

## 1. WELCOME

Dear participant,

You are invited to participate in a research study entitled “*Cyclists’ predictions of car drivers’ intentions at intersections*”. The study is being conducted by Natália Kováčsová, Joost de Winter, and Marjan Hagenzieker, Delft University of Technology, The Netherlands.

This study focuses on the cyclists’ behavior when approaching an intersection. The survey consists of a questionnaire in which we ask you about your cycling behavior, skills, and experience. In the second part of the survey, we ask you to watch videos from real traffic and to answer questions about your predictions of what will happen next.

You are eligible to participate in this survey when you are at least 18 years old.

We estimate that completing the survey will take approximately 20 minutes of your time. The survey is strictly anonymous. All your responses are treated as confidential, and in no case will responses from individual participants be identified. The data from this survey may be reported or published. However again, your individual responses will be anonymous. Your participation is entirely voluntary.

### Questions?

If you have any questions about this study, you may contact the study investigator Natália Kováčsová (n.kovacsova@tudelft.nl).

### Willingness to Participate

If you agree to participate and understand your participation is voluntary, then continue. If you would not like to participate, then please close this page.

\* 1. Have you read and understood the above instructions?

Yes

No

## 2. BACKGROUND INFORMATION

\* 2. What is your gender?

- Female  Male  I prefer not to respond

\* 3. What is your age?

\* 4. What is your country of residence?

\* 5. What is your primary mode of transport?

- Car  Bicycle  Walking  
 Motorcycle/Moped  Public transport  
 Other (please specify)

### CYCLING EXPERIENCE

\* 6. At what age did you start cycling?

\* 7. About how many kilometers (miles) on average do you cycle per week in the summertime?

- |   |   |
|---|---|
| <input type="radio"/> 0 km / mi               | <input type="radio"/> 91 – 120 km (56 – 74 mi)            |
| <input type="radio"/> 1 – 5 km (1 – 3 mi)     | <input type="radio"/> 121 – 150 km (75 – 93 mi)           |
| <input type="radio"/> 6 – 10 km (4 – 6 mi)    | <input type="radio"/> 151 – 200 km (93 – 124 mi)          |
| <input type="radio"/> 11 – 30 km (7 – 18 mi)  | <input type="radio"/> More than 201 km (more than 125 mi) |
| <input type="radio"/> 31 – 60 km (19 – 37 mi) | <input type="radio"/> I prefer not to respond             |
| <input type="radio"/> 61 – 90 km (38 – 55 mi) |   |

\* 8. How often do you cycle in the summertime?

- Never  1-3 days per week  I prefer not to respond  
 Less than once a month  4-6 days per week  
 Once a month to once a week  Every day

\* 9. What type of bike do you have?

*(You can give multiple answers)*

- City bike  Folding bike  I do not own a bicycle  
 'Granny' bike  Electric bike  I prefer not to respond  
 Mountain bike  Touring bike/hybrid  
 Racing (road) bike  Fixed-gear bike  
 Other (please specify)

**DRIVING EXPERIENCE**

\* 10. On average, how often did you drive a motor vehicle in the last 12 months?

- Never  1-3 days per week  I prefer not to respond  
 Less than once a month  4-6 days per week  
 Once a month to once a week  Every day

\* 11. About how many kilometers (miles) did you drive in the last 12 months?

*This items relates to your experience with motor vehicles.*

- 0 km / mi  25,001 – 35,000 km (15,535 – 21,748 mi)  
 1 – 1,000 km (1 – 621 mi)  35,001 – 50,000 km (21,749 – 31,069 mi)  
 1,001 – 5,000 km (622 - 3,107 mi)  50,001 – 100,000 km (31,070 – 62,137 mi)  
 5,001 – 15,000 km (3,108 – 9,321 mi)  More than 100,000 km (more than 62,137 mi)  
 15,001 – 20,000 km (9,322 – 12,427 mi)  I prefer not to respond  
 20,001 – 25,000 km (12,428 – 15,534 mi)

### 3. PRACTICE VIDEOS

You will now look at videos taken from a cyclist's perspective. In each video, you will have to pay attention to a particular car. After each video, you will answer questions about a car that is encircled at the end of the video.

In each video, the cyclist is going straight ahead. When traffic lights are present in the video, the cyclist always has a green light.

#### Important notes:

- Please watch the videos and complete the questions in the order they appear.
- Please watch each video only once. In case you did not notice the car about which we ask you questions, you may replay the video once again. However, we kindly ask you to pay attention during the first viewing.

#### PRACTICE VIDEO

Instructions: Now, you will see a practice video that you can get familiar with the task and items we are going to ask you after each video.

\*

12.

The situation was risky.

Strongly disagree

Strongly agree



\* 13. Imagine that you are the cyclist in the video.

Would you slow down?

- Yes, I would slow down
- No, I would continue cycling at this speed

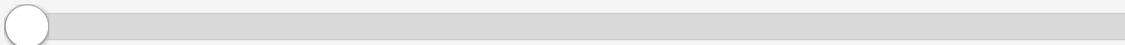
\* 14. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 15. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 16. Which factors contributed to your prediction?

(You can select multiple answers.)

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> High speed of the car             | <input type="checkbox"/> Speeding up (acceleration) of the car | <input type="checkbox"/> Lines/markers                              |
| <input type="checkbox"/> Low speed of the car              | <input type="checkbox"/> Turn signals of the car are ON        | <input type="checkbox"/> "I have priority rules"                    |
| <input type="checkbox"/> Braking (deceleration) of the car | <input type="checkbox"/> Turn signals of the car are OFF       | <input type="checkbox"/> "I have experienced similar intersections" |
| <input type="checkbox"/> Other (please specify)            |  |   |

\* 17. The encircled car has priority in this situation.

- Yes  No  Unsure

\* 18. How many times did you watch the video?

- 1  4  0  
 2  5  
 3  More than 5

\* 19. What was the color of the encircled car?

- White  Red  
 Black  Yellow

**Instructions: Now, you will see 10 experimental videos.**

4. EXPERIMENTAL VIDEO

\*

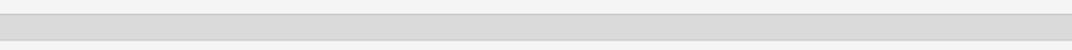


20.

The situation was risky.

Strongly disagree

Strongly agree



\* 21. Imagine that you are the cyclist in the video.

Would you slow down?

Yes, I would slow down

No, I would continue cycling at this speed

\* 22. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 23. I am certain about my previous answer.

Strongly disagree Strongly agree

\* 24. Which factors contributed to your prediction?

(You can select multiple answers.)

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> High speed of the car             | <input type="checkbox"/> Speeding up (acceleration) of the car | <input type="checkbox"/> Lines/markers                              |
| <input type="checkbox"/> Low speed of the car              | <input type="checkbox"/> Turn signals of the car are ON        | <input type="checkbox"/> "I have priority rules"                    |
| <input type="checkbox"/> Braking (deceleration) of the car | <input type="checkbox"/> Turn signals of the car are OFF       | <input type="checkbox"/> "I have experienced similar intersections" |
| <input type="checkbox"/> Other (please specify)            |  |   |

\* 25. The encircled car has priority in this situation.

- Yes  No  Unsure

\* 26. How many times did you watch the video?

- 1  4  0
- 2  5
- 3  More than 5

\* 27. What was the color of the encircled car?

- Black  Red
- Silver  White

5. EXPERIMENTAL VIDEO

\*



28.

The situation was risky.

Strongly disagree

Strongly agree



\* 29. Imagine that you are the cyclist in the video.

Would you slow down?

Yes, I would slow down

No, I would continue cycling at this speed

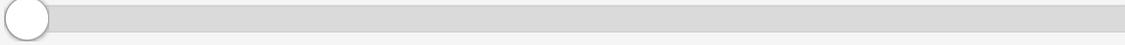
\* 30. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 31. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 32. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Speeding up (acceleration) of the car
- Lines/markers
- Low speed of the car
- Turn signals of the car are ON
- "I have priority rules"
- Braking (deceleration) of the car
- Turn signals of the car are OFF
- "I have experienced similar intersections"
- Other (please specify)

\* 33. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 34. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 35. What was the color of the encircled car?

- White
- Red
- Green
- Silver

6. EXPERIMENTAL VIDEO

\*

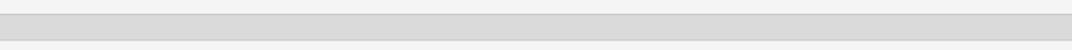


36.

The situation was risky.

Strongly disagree

Strongly agree



\* 37. Imagine that you are the cyclist in the video.

Would you slow down?



Yes, I would slow down



No, I would continue cycling at this speed

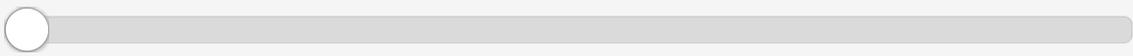
\* 38. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 39. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 40. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Speeding up (acceleration) of the car
- Lines/markers
- Low speed of the car
- Turn signals of the car are ON
- "I have priority rules"
- Braking (deceleration) of the car
- Turn signals of the car are OFF
- "I have experienced similar intersections"
- Other (please specify)

\* 41. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 42. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 43. What was the color of the encircled car?

- Blue
- White
- Black
- Red

7. EXPERIMENTAL VIDEO

\*



44.

The situation was risky.

Strongly disagree

Strongly agree

\* 45. Imagine that you are the cyclist in the video.

Would you slow down?

Yes, I would slow down

No, I would continue cycling at this speed

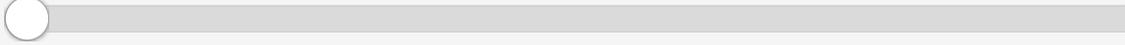
\* 46. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 47. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 48. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Speeding up (acceleration) of the car
- Lines/markers
- Low speed of the car
- Turn signals of the car are ON
- "I have priority rules"
- Braking (deceleration) of the car
- Turn signals of the car are OFF
- "I have experienced similar intersections"
- Other (please specify)

\* 49. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 50. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 51. What was the color of the encircled car?

- Black
- Red
- Yellow
- Silver

8. EXPERIMENTAL VIDEO

\*



52.

The situation was risky.

Strongly disagree

Strongly agree



\* 53. Imagine that you are the cyclist in the video.

Would you slow down?



Yes, I would slow down



No, I would continue cycling at this speed

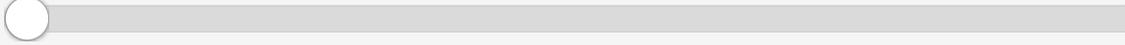
\* 54. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 55. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 56. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Low speed of the car
- Braking (deceleration) of the car
- Other (please specify)
- Speeding up (acceleration) of the car
- Turn signals of the car are ON
- Turn signals of the car are OFF
- Lines/markers
- "I have priority rules"
- "I have experienced similar intersections"

\* 57. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 58. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 59. What was the color of the encircled car?

- Green
- Black
- White
- Red

9. EXPERIMENTAL VIDEO

\*



60.

The situation was risky.

Strongly disagree

Strongly agree



\* 61. Imagine that you are the cyclist in the video.

Would you slow down?

Yes, I would slow down

No, I would continue cycling at this speed

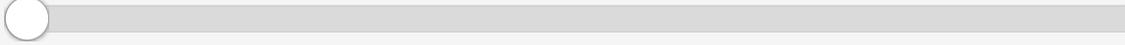
\* 62. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 63. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 64. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Low speed of the car
- Braking (deceleration) of the car
- Other (please specify)
- Speeding up (acceleration) of the car
- Turn signals of the car are ON
- Turn signals of the car are OFF
- Lines/markers
- "I have priority rules"
- "I have experienced similar intersections"

\* 65. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 66. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 67. What was the color of the encircled car?

- Red
- Yellow
- Silver
- Purple

10. EXPERIMENTAL VIDEO

\*



68.

The situation was risky.

Strongly disagree

Strongly agree

\* 69. Imagine that you are the cyclist in the video.

Would you slow down?

Yes, I would slow down

No, I would continue cycling at this speed

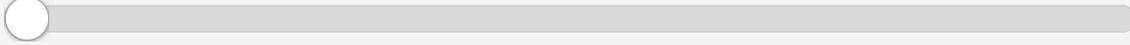
\* 70. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 71. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 72. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Speeding up (acceleration) of the car
- Lines/markers
- Low speed of the car
- Turn signals of the car are ON
- "I have priority rules"
- Braking (deceleration) of the car
- Turn signals of the car are OFF
- "I have experienced similar intersections"
- Other (please specify)

\* 73. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 74. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 75. What was the color of the encircled car?

- Black
- White
- Red
- Yellow

11. EXPERIMENTAL VIDEO

\*

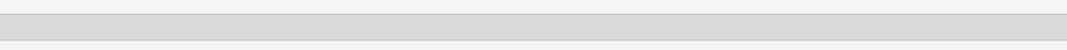


76.

The situation was risky.

Strongly disagree

Strongly agree



\* 77. Imagine that you are the cyclist in the video.

Would you slow down?

Yes, I would slow down

No, I would continue cycling at this speed

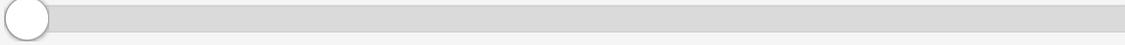
\* 78. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 79. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 80. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Speeding up (acceleration) of the car
- Lines/markers
- Low speed of the car
- Turn signals of the car are ON
- "I have priority rules"
- Braking (deceleration) of the car
- Turn signals of the car are OFF
- "I have experienced similar intersections"
- Other (please specify)

\* 81. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 82. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 83. What was the color of the encircled car?

- Silver
- Red
- Green
- Black

## 12. EXPERIMENTAL VIDEO

\*

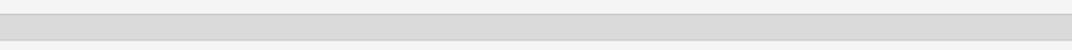


84.

The situation was risky.

Strongly disagree

Strongly agree



\* 85. Imagine that you are the cyclist in the video.

Would you slow down?



Yes, I would slow down



No, I would continue cycling at this speed

\* 86. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 87. I am certain about my previous answer.

Strongly disagree Strongly agree

\* 88. Which factors contributed to your prediction?

(You can select multiple answers.)

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> High speed of the car             | <input type="checkbox"/> Speeding up (acceleration) of the car | <input type="checkbox"/> Lines/markers                              |
| <input type="checkbox"/> Low speed of the car              | <input type="checkbox"/> Turn signals of the car are ON        | <input type="checkbox"/> "I have priority rules"                    |
| <input type="checkbox"/> Braking (deceleration) of the car | <input type="checkbox"/> Turn signals of the car are OFF       | <input type="checkbox"/> "I have experienced similar intersections" |
| <input type="checkbox"/> Other (please specify)            |  |   |

\* 89. The encircled car has priority in this situation.

- Yes  No  Unsure

\* 90. How many times did you watch the video?

- 1  4  0
- 2  5
- 3  More than 5

\* 91. What was the color of the encircled car?

- Blue  Red
- Black  White

13. EXPERIMENTAL VIDEO

\*

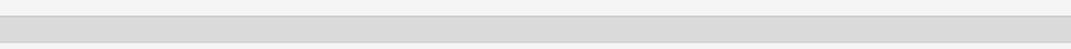


92.

The situation was risky.

Strongly disagree

Strongly agree



\* 93. Imagine that you are the cyclist in the video.

Would you slow down?



Yes, I would slow down



No, I would continue cycling at this speed

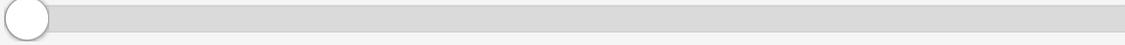
\* 94. Imagine that the cyclist in the video will continue cycling at this speed.

Will the car driver let the cyclist cross first?

- Yes, the car driver will slow down and let the cyclist cross first
- No

\* 95. I am certain about my previous answer.

Strongly disagree Strongly agree



\* 96. Which factors contributed to your prediction?

(You can select multiple answers.)

- High speed of the car
- Low speed of the car
- Braking (deceleration) of the car
- Other (please specify)
- Speeding up (acceleration) of the car
- Turn signals of the car are ON
- Turn signals of the car are OFF
- Lines/markers
- "I have priority rules"
- "I have experienced similar intersections"

\* 97. The encircled car has priority in this situation.

- Yes
- No
- Unsure

\* 98. How many times did you watch the video?

- 1
- 2
- 3
- 4
- 5
- More than 5
- 0

\* 99. What was the color of the encircled car?

- Blue
- White
- Black
- Green

14. FINAL QUESTIONNAIRE

\* 100. Which are the strong and weak components in your biking?

There are many differences between cyclists, especially in different components of cycling. We all have strong and weak components. Please indicate your strong and weak components by ticking ONE of the alternatives next to each item.

	Definitely weak	Weak	Neither weak nor strong	Strong	Definitely strong
Cycling when it is slippery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing how to act in particular traffic situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obeying traffic signals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tolerating other road users' errors calmly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Controlling the bicycle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adjusting speed to the conditions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sudden braking and/or swerving when needed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staying calm in irritating situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recognizing hazards in traffic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fast reactions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Definitely weak	Weak	Neither weak nor strong	Strong	Definitely strong
Yielding to somebody else who does not have right of way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoiding unnecessary risks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cycling carefully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Predicting traffic situations ahead.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maneuvering smoothly through busy traffic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obeying traffic rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Showing consideration for other road users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 101. How many accidents were you involved in as a cyclist during the last 3 years?**

*(Please include all accidents, regardless of how they were caused, how slight they were, or where they happened)*

- 0                       3                       More than 5  
 1                       4                       I prefer not to respond  
 2                       5

**\* 102. What was the cause of the accident(s)?**

- I was not involved in any accidents as a cyclist                       Collision with another cyclist  
 Fall from bicycle                       Collision with a motorbike / moped  
 Collision with a pedestrian                       Collision with obstacle (curb, pole, etc.)  
 Collision with a motor vehicle (car, truck, etc.)                       I prefer not to respond  
 Other (please specify)

\* 103. Did any of your reported accidents with a motorized vehicle happen at an intersection?

Yes

No

I was not involved in any accidents with a motorized vehicle as a cyclist

I prefer not to respond

\* 104. Were you involved in a collision with another cyclist when driving a motorized vehicle during the last 3 years?

(Please include all accidents, regardless of how they were caused how slight they were, or where they happened)

0

3

More than 5

1

4

I prefer not to respond

2

5

\* 105. Did any of your reported accidents with another cyclist happen at an intersection?

Yes

No

I was not involved in any accidents with another cyclist

I prefer not to respond

106. We are interested in any comments you might have on this survey. Please write any comments you would like to share with us here.