

KYSELYLOMAKE: FSD3712 ROBOTTIEN HYVÄKSYMINEN JA SOSIAALISET PROSESSIT: YH-  
DYSVALLAT, TAMMIKUU 2019

QUESTIONNAIRE: FSD3712 ROBOTS US SURVEY: UNITED STATES, JANUARY 2019

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Tämä kyselylomake on osa yllä mainittua Yhteiskuntatieteelliseen tietoarkistoon arkistoitua tutkimusaineistoa.

Kyselylomaketta hyödyntävien tulee viitata siihen asianmukaisesti lähdeviitteellä.

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This questionnaire forms a part of the above mentioned dataset, archived at the Finnish Social Science Data Archive.

If the questionnaire is used or referred to in any way, the source must be acknowledged by means of an appropriate bibliographic citation.

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Detta frågeformulär utgör en del av den ovannämnda datamängden, arkiverad på Finlands samhällsvetenskapliga dataarkiv.

Om frågeformuläret är utnyttjat eller refererat till måste källan anges i form av bibliografisk referens.

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## **Consent/introduction**

Dear respondent, welcome to the Robots and Us 2019 survey!

Tampere University in Finland is conducting a study on human-robot interaction and current public opinion on robots.

The survey takes about 10 minutes to complete. At the beginning of the survey you will be asked to provide some background information about yourself. Read each question carefully and choose or type in the most suitable option that reflects your opinion.

Participation is voluntary and you may exit the survey at any time. We do not collect any personal identifiable data. Your responses are treated as confidential. In the end of this research project, the data will be handed over to Finnish Social Science Data Archive (FSD). By completing the survey, you allow the reuse of this data for further research. If you have any questions about this survey, you may contact the researcher of this project at [ANONYMIZED].

## **Closing words**

Thank you for participating in our study!

After the background information section, you were asked to picture yourself in an imaginary workplace situation. Here, the respondents were randomly assigned to three different groups, each of which received slightly different scenarios. The purpose of this was to examine if people demonstrate group identification differently when assigned to a team consisting of only humans, versus when assigned to a team consisting of one or more robots.

If you wish, you may contact the researcher of this project at [ANONYMIZED].

### **Hidden, response statistic, and transformation variables:**

**[randomid]**: IDs for the test groups (Groups A and B = randomid 1 and 2) and control group (Group C = randomid 3), hidden from respondents.

**[submitdate]**: Date stamp when answers submitted.

**[interviewtime]**: Response time in seconds.

**[agegroup]**: Age group of the respondent.

**[region]**: Living region of the respondent.

## **PART 1: BACKGROUND QUESTIONS**

### **Background information [BV]**

Gender **[bv1; male = M, female = F, no answer = (empty)]**

Is English your native language? **[bv3a, No=0, Yes=1]**

How would you describe where you live? **[bv4]**

1. A large city (over 250,000 inhabitants)
2. A medium-sized city (50,000 – 250,000 inhabitants)
3. A small city or town (under 50,000 inhabitants)
4. A suburb near a city
5. Open country or a rural area

Are you currently **[bv5]**

1. Living alone
2. Married or living with a partner, no children
3. Single parent
4. Married or living with a partner, children
5. I live with my parents
6. Other household type (e.g. living with roommates)

Which is the highest level of education you have achieved? **[bv6]**

1. Less than a High School diploma
2. High School diploma
3. Some college
4. A college degree
5. A master's degree, professional degree, or higher

Do you have a degree from the field of engineering or technology? **[bv7; Yes = 1, No = 0]**

What is your main occupation? **[bv8]**

1. I'm in school / I'm a student
2. I'm in a paid, full-time job
3. I'm in a paid, part-time job, and I am not looking for a full-time job
4. I'm in a paid, part-time job, but I am looking for a full-time job
5. I'm unemployed and looking for a job
6. I'm unemployed and not looking for a job

Which field of industry is closest to your work or study? [bv9] (**International Standard Industrial Classification of All Economic Activities ISIC**)

1. Agriculture, forestry and fishing
2. Mining and quarrying
3. Manufacturing
4. Electricity, gas, steam and air conditioning supply
5. Water supply; sewerage, waste management and remediation activities
6. Construction
7. Wholesale and retail trade; repair of motor vehicles and motorcycles
8. Transportation and storage
9. Accommodation and food service activities
10. Information and communication
11. Financial and insurance activities
12. Real estate activities
13. Professional, scientific and technical activities
14. Administrative and support service activities
15. Public administration and defense; compulsory social security
16. Education
17. Human health and social work activities
18. Arts, entertainment and recreation
19. Other service activities
20. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
21. Activities of extraterritorial organizations and bodies

What is your household's gross annual income (before taxes)? [bv10]

1. Under \$15,000
2. \$15,000–\$34,999
3. \$35,000–\$74,999
4. \$75,000–\$154,999
5. \$155,000–\$499,999
6. \$500,000 and over

**Big Five Inventory [BF]**  
**BFI-S (Lang, John, Lüdtke, Schupp, & Wagner 2011)**

*Please answer to what degree you agree with the following statements (Strongly disagree 1 – 7 Strongly agree):*

*I see myself as someone who:*

Worries a lot [bf1]

Gets nervous easily [bf2]

Is relaxed, handles stress well [bf3]  
Is talkative [bf4]  
Is outgoing, sociable [bf5]  
Is reserved [bf6]  
Is original, comes up with new ideas [bf7]  
Values artistic, aesthetic experiences [bf8]  
Has an active imagination [bf9]  
Is sometimes rude to others [bf10]  
Has a forgiving nature [bf11]  
Is considerate and kind to almost everyone [bf12]  
Does a thorough job [bf13]  
Tends to be lazy [bf14]  
Does things efficiently [bf15]

## **PART 2: EXPERIMENTS [IGI] [E] [W]**

The respondents are split into three groups by manipulating the group composition in the scenario.

GROUP A = randomid1 (4 robots)  
GROUP B = randomid2 (1 robot, 3 humans)  
GROUP C = randomid3 (no robots = control group)

**GROUP A:** *Imagine that you have just been assigned to a new team in your new job. Based on merit, you and four robots have been chosen to this new work team.*

**GROUP B:** *Imagine that you have just been assigned to a new team in your new job. Based on merit, you and three other people and a robot have been chosen to this new work team.*

**GROUP C:** *Imagine that you have just been assigned to a new team in your new job. Based on merit, you and four other people have been chosen to this new work team.*

### **In-group identification [IGI]**

A survey experiment utilizing an in-group identification survey measure: **Group-level self-definition and self-investment in-group identification model (Leach et al. 2008).**

*Please answer to what degree you agree with the following statements (Strongly disagree 1 – 7 Strongly agree):*

I feel a bond with our team. [igi1]  
I feel solidarity with our team. [igi2]  
I feel committed to our team. [igi3]  
I am glad to be a member of this team. [igi4]  
I think that this team has a lot to be proud of. [igi5]  
It is pleasant to be a member of this team. [igi6]  
Being a member of this team gives me a good feeling. [igi7]  
I often think about the fact that I am a member of this team. [igi8]  
The fact that I am a member of this team is an important part of my identity. [igi9]

Being a member of this team is an important part of how I see myself. [igi10]

I have a lot in common with the average member of this team. [igi11]

I am similar to the average member of this team. [igi12]

Members of this team have a lot in common with each other. [igi13]

Members of this team are very similar to each other. [igi14]

GROUP A [aig1–aig14]

GROUP B [big1–big14]

GROUP C [cig1–cig14]

### **Working with a robot [E]**

Additional questions for the survey experiment: personal interest/motivation (e1–e2), emotional reactions (e3–e4), humanization and equality expectations (e5–e7), and group performance expectations (e8–e10).

*Please answer to what degree you agree with the following statements (Strongly disagree 1 – 7 Strongly agree):*

I would like to work in this job [e1]

This job suits me [e2]

I feel anxious to work in this team [e3]

I am excited to be in this team [e4]

I feel all the teammates will be equal [e5]

(ask if group A or B) I think a human should be in charge of this team [e6]

(ask if group A or B) Calling a robot by name would feel weird [e7]

I think this group will be efficient [e8]

I think this group will be cooperative [e9]

This team will be superior to other teams [e10]

GROUP A [ae1–ae10]

GROUP B [be1–be10]

GROUP C [ce1–ce5, ce8–ce10]

### **Write a post on social media [W]**

A roleplay survey experiment.

GROUP A: Imagine that you have just had your first day at your new job. There are four robots in your team and you are the only human. Please write a post to your favorite social media site about your first day (max. 160 characters). [aw, \_\_\_\_]

GROUP B: Imagine that you have just had your first day at your new job. There are four people in your team and one robot. Please write a post to your favorite social media site about your first day (max. 160 characters). [bw, \_\_\_\_]

GROUP C: Imagine that you have just had your first day at your new job. There are five people in your team. Please write a post to your favorite social media site about your first day (max. 160 characters). [cw, \_\_\_\_]

## **PART 3: ROBOT QUESTIONS**

### **Exposure to robots [RE]**

Have you ever used a robot or been in an interaction with a robot? [re1a; No = 0, Yes = 1, Don't know = 2]

If re1a = 1 or 2, ask: Where have you used a robot or been in an interaction with a robot? [re1b1–re1b3; No = 0, Yes = 1, multiple choices possible]

At work [re1b1]

At home [re1b2]

Somewhere else [re1b3]

Have you heard, read or seen anything about robots in any of the following? [re2–re10; No = 0, Yes = 1, multiple choices possible]

Movies [re2]

Tv-shows [re3]

Games [re4]

Fiction literature (novels etc.) [re5]

Non-fiction literature (textbooks etc.) [re6]

Newspapers or news websites [re7]

Non-fiction movies or tv-shows (documentaries etc.) [re8]

Research, exhibition or promotional event [re9]

Other: \_\_\_\_ [re10, \_\_\_\_ ]

### **Views on robots and technology [RT]**

Generally speaking, how positive or negative is your view on robots? [rt1; Very negative 1 – 7 Very positive]

*Please answer to what degree you agree with the following statements* [rt2–rt9; Strongly disagree 1 – 7 Strongly agree]

I am interested in technology and its development [rt2]

I think I can learn to use new technology easily [rt3]

Robots are a good thing for society, because they help people do their jobs or carry out daily tasks at home [rt4]

Robots are necessary as they can do jobs that are too hard or too dangerous for people [rt5]

Robots steal people's jobs [rt6]

My current job could be done by a robot in the future [rt7]

Due to the use of robots, more jobs will disappear than new jobs will be created [rt8]

Robots suit my occupational field well [rt9]

## **Views on human-robot-interaction [HR]**

*How comfortable would you be about* [hr1–hr12; Totally uncomfortable 1 – 7 Totally comfortable]

- ... using a robot as equipment at work? **[hr1]**
- ... having a robot as your co-worker? **[hr2]**
- ... shaking hands with a robot? **[hr3]**
- ... hugging a robot? **[hr4]**
- ... robot giving you a pat on the back? **[hr5]**
- ... giving a robot a pat on the back? **[hr6]**
- ... robot's surface being hard when touching it? **[hr7]**
- ... robot's surface being soft when touching it? **[hr8]**
- ... having a conversation with a robot? **[hr9]**
- ... asking robot a question? **[hr10]**
- ... responding to robot's question? **[hr11]**
- ... robot following your movements with its gaze? **[hr12]**



## REFERENCES

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