Survey on Lethal Autonomous Weapons
Questions and Graphs
December 2019

The questions set out here were part of a survey that the Research Team launched in 2019 to gauge opinions on lethal autonomous weapon systems (LAWS).

The target audience of this survey was a non-specialist but restricted audience consisting of the students both at the Master and PhD level of the Graduate Institute of International and Development Studies (IHEID).

The survey was divided in three parts. First, some general demographic questions were asked. Second, the survey proceeded with some introductory questions on the awareness and attitude towards Artificial Intelligence (AI) more in general. Only the third set of questions specifically addressed the issue of AI in weapon systems.

This tripartite structure allowed to better understand whether some attitudes are specific to the use of AI when it comes to weapon systems or whether these attitudes are more generally linked to the use of AI irrespective of the field of application.

This document provides all the questions in written form and then some graphical representation and analysis is put forward for each question based on the responses obtained. All the analysis was done using STATA as a software.

Lastly, this document contains the link to an online spreadsheet with all the raw data and a link to the final survey administered. Some information on the standardization of data is also provided in this section.

Table of Contents

I. **Questions for Public Survey**

A. Demographic and General Questions

1. Gender:

2. Nationality:

3. Position at IHEID (select the option which best describes you): (a) Master's student; (b) PhD student; (e) exchange student

4. Which department or program are you enrolled in: (a) history; (b) political science / international relations; (c) anthropology / sociology; (d) international law (d) international economics (e) MIA (f) MDEV

B. Introductory questions to gauge awareness of and attitudes to AI more generally

5) On a scale of 1-10, how well do you understand what AI is and how it is used:

6. Which one of these devices uses AI? (select all options that apply) (a) iPhone (or similar) (b) Alexa (or similar) (c) Fitbit (or similar) (d) Netflix, Spotify, etc. (or similar) (e) None

7. How would you describe your attitude towards the emergence of AI-driven technologies?

8. The increased incorporation of AI into everyday life and technology is inevitable. Do you agree with this statement?

9. The increased incorporation of AI into everyday life and technology is desirable. Do you agree with this statement?

10. How would you feel about traveling in a self-driving car?

11. A self-driving car crashes into a truck, killing the truck driver, because the program does not allow the car to identify the truck as an object to be avoided. Who is directly responsible for the killing?

12. How the developers of self-driving cars have to address the so-called trolley problem: choosing whether the car should continue its path and kill 5 people or move to a different path and kill only 1 person?

C. Specific questions regarding LAWS (Lethal Autonomous Weapon Systems)

13. AI should be used in weapon systems. Do you agree with this statement?

14. The use of AI-based weapons decreases the risk of mistakenly attacking civilians or civilian objects in war. Do you agree with this statement?

15. AI must be used in AI-based weapons if it is proven that they will perform better than humans on the battlefield (i.e. they will make fewer mistakes). Do you agree with this statement?

16. AI-based weapons must undertake military actions against non-human targets, e.g., attack a building or military barracks, without human supervision. Do you agree with this statement?

17. Does your answer to the previous question change if the military action causes incidental civilian losses?

18. AI-based weapons must undertake military actions against human targets, e.g. attack and kill enemy combatants, without human supervision. Do you agree with this statement?

19. Does your answer to the previous question change if the military action causes incidental civilian losses?

20. The development and deployment of AI-based weapons will increase the likelihood of armed conflicts between states. Do you agree with this statement?

21. The development and deployment of AI-based weapons will increase the likelihood of armed conflicts between states and armed groups (e.g. terrorist groups). Do you agree with this statement?

22. An AI-based weapon, acting without human supervision, breaches the laws of war, killing a large number of civilians. Who is directly responsible for the ensuing war crime?

23. An AI-based weapon, acting under human control and supervision, breaches the laws of war, killing a large number of civilians. Who is directly responsible for the ensuing war crime?
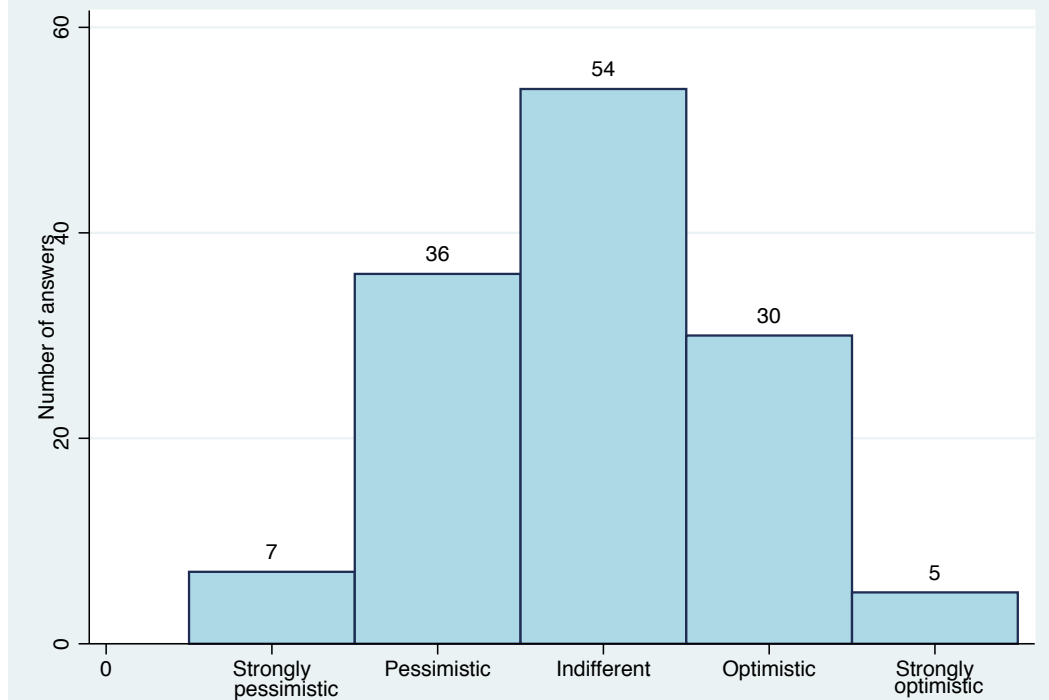
II. Graphs

6. Which one of these devices uses AI? (select all options that apply)
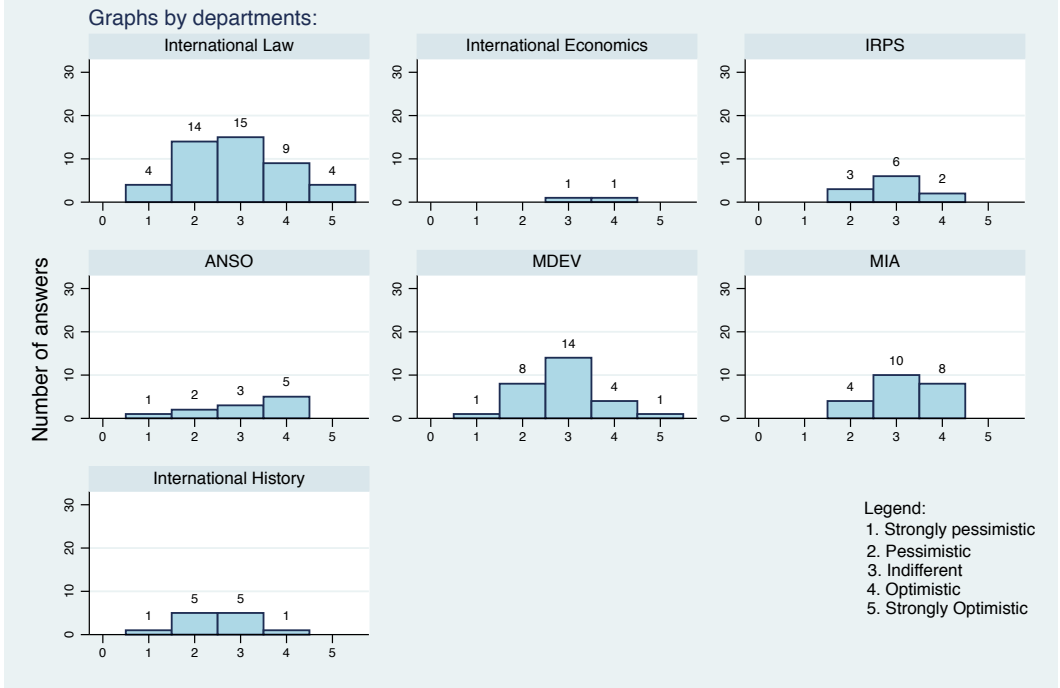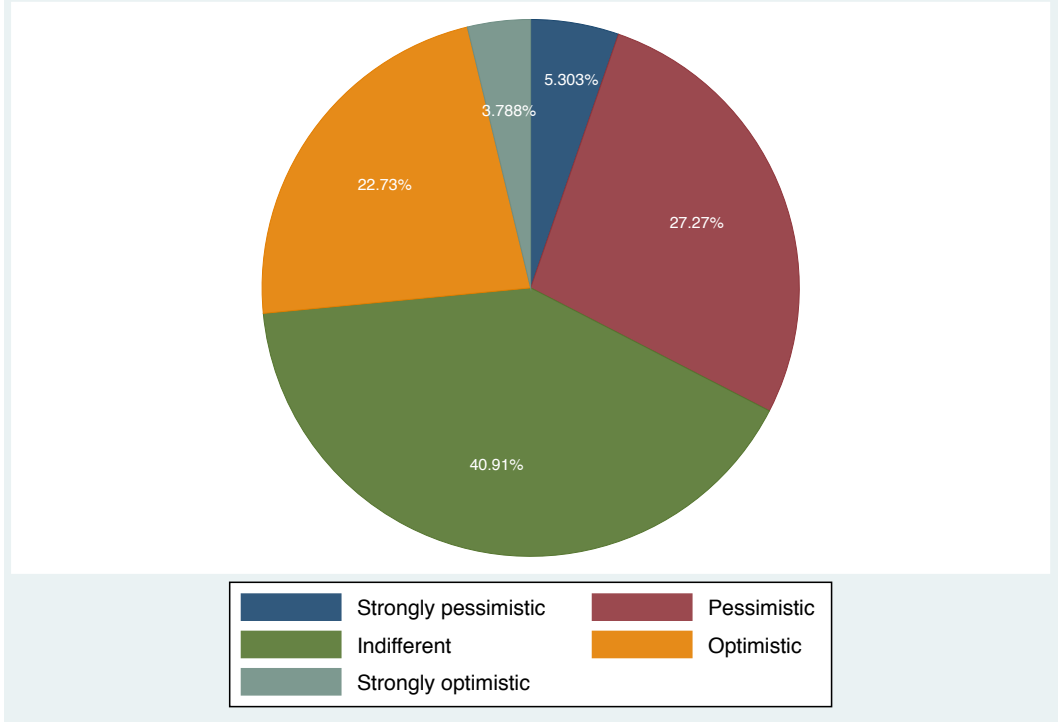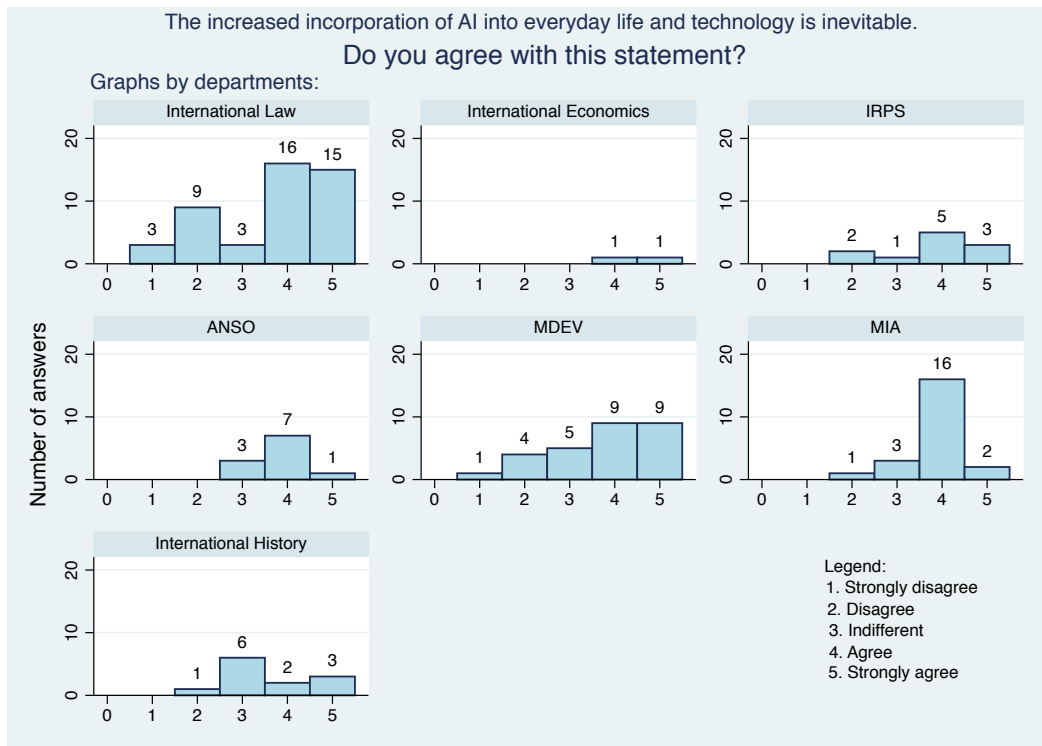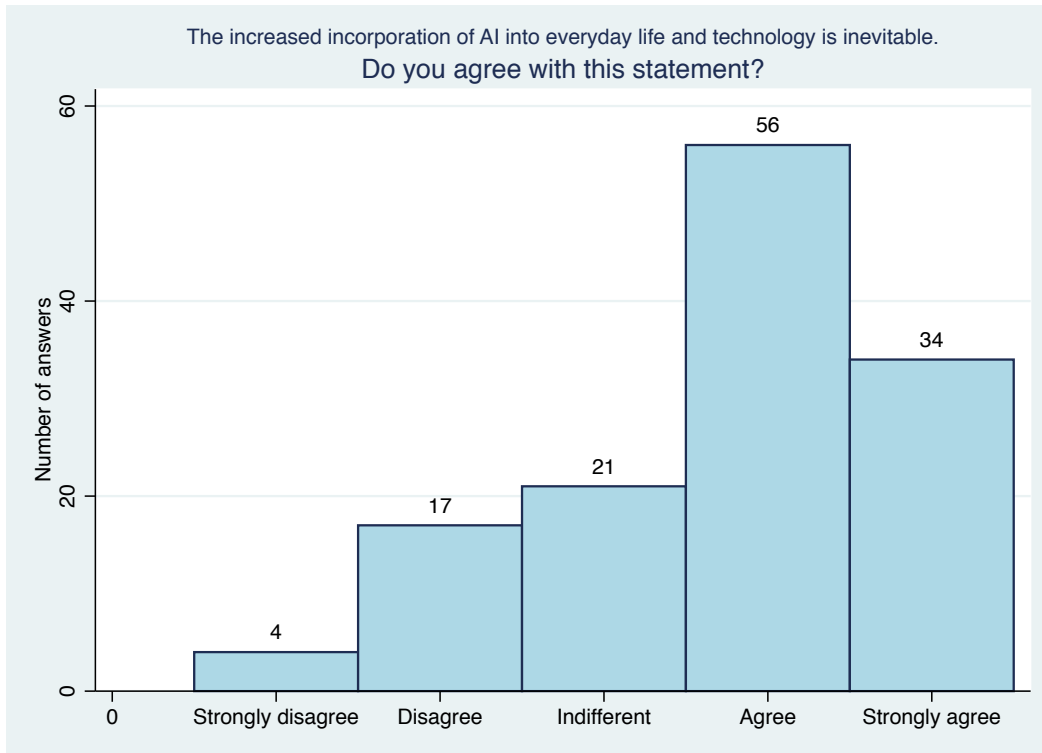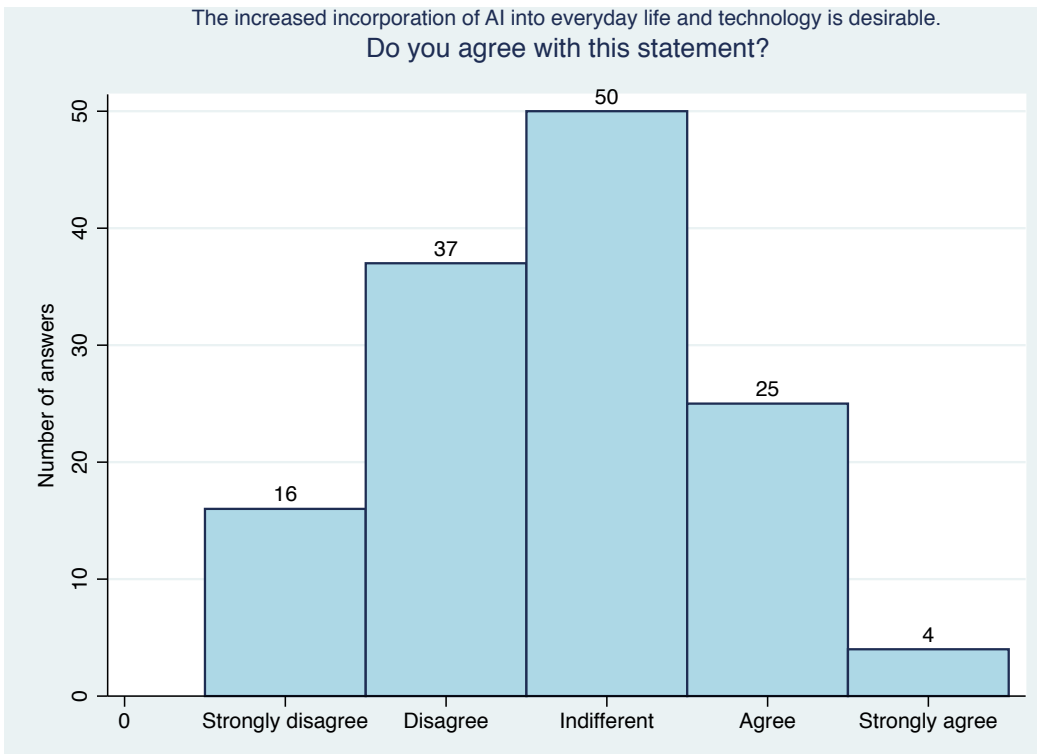
130 responses
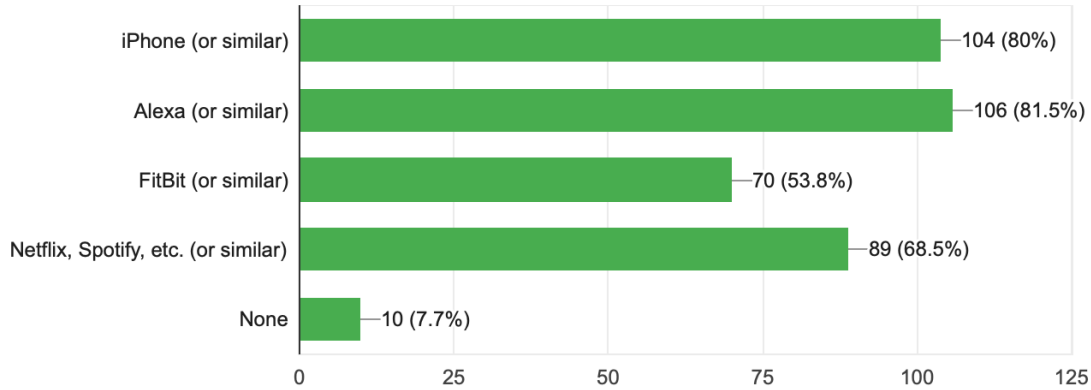
How would you describe your attitude towards the emergence of AI-driven technologies?

How would you describe your attitude towards the emergence of AI-driven technologies?

Graphs by departments:

Legend:
1. Strongly pessimistic
2. Pessimistic
3. Indifferent
4. Optimistic
5. Strongly Optimistic

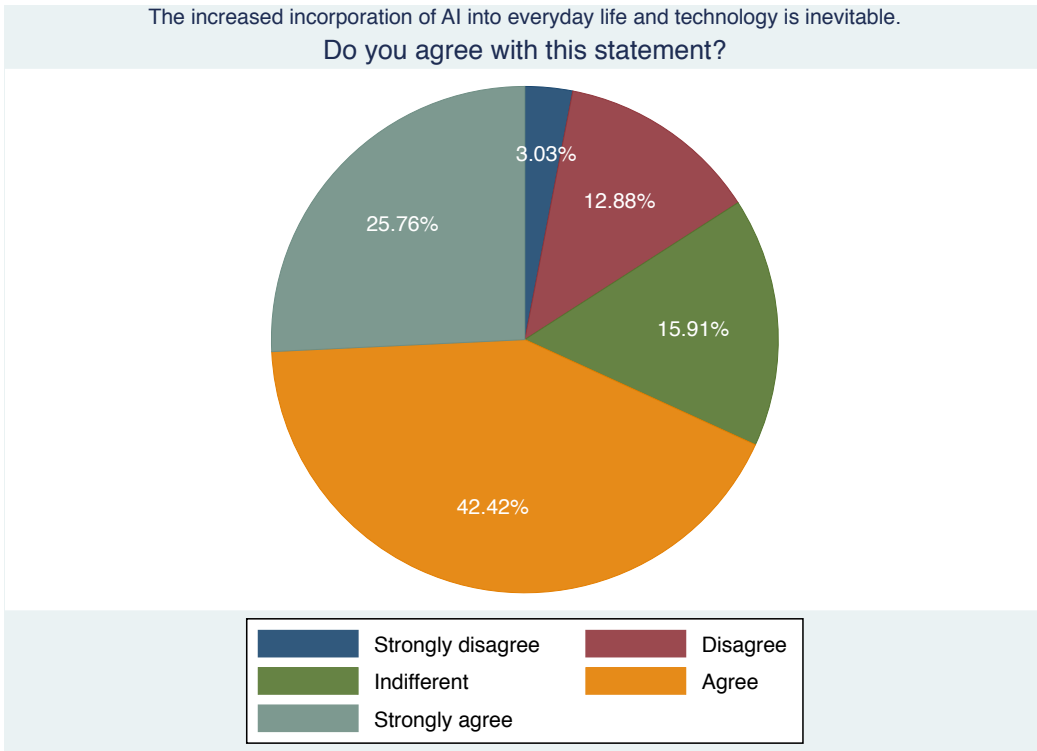## How would you describe your attitude towards the emergence of AI-driven technologies?

Strongly pessimistic — Pessimistic — Indifferent — Optimistic — Strongly optimistic

The increased incorporation of AI into everyday life and technology is inevitable.
Do you agree with this statement?

The increased incorporation of AI into everyday life and technology is inevitable.
Do you agree with this statement?

Graphs by departments:

Legend:
1. Strongly disagree
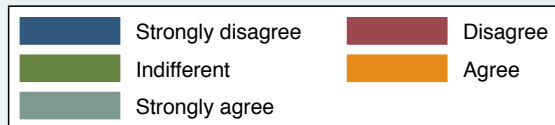2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

The increased incorporation of AI into everyday life and technology is inevitable.
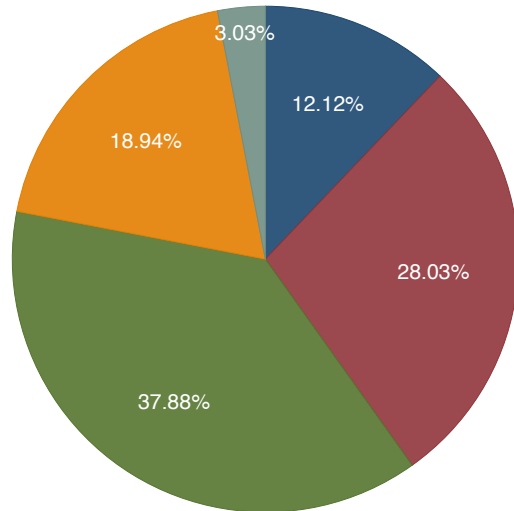## Do you agree with this statement?

The increased incorporation of AI into everyday life and technology is desirable.
Do you agree with this statement?

The increased incorporation of AI into everyday life and technology is desirable.
Do you agree with this statement?

Graphs by departments:

Legend:
1. Strongly disagree
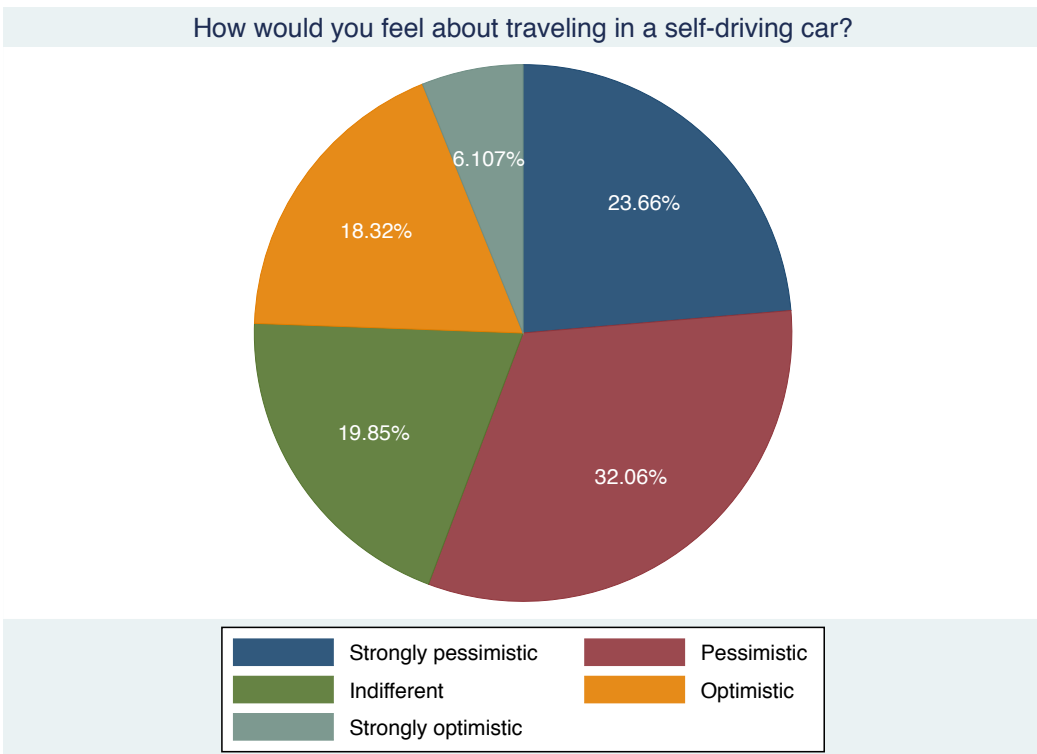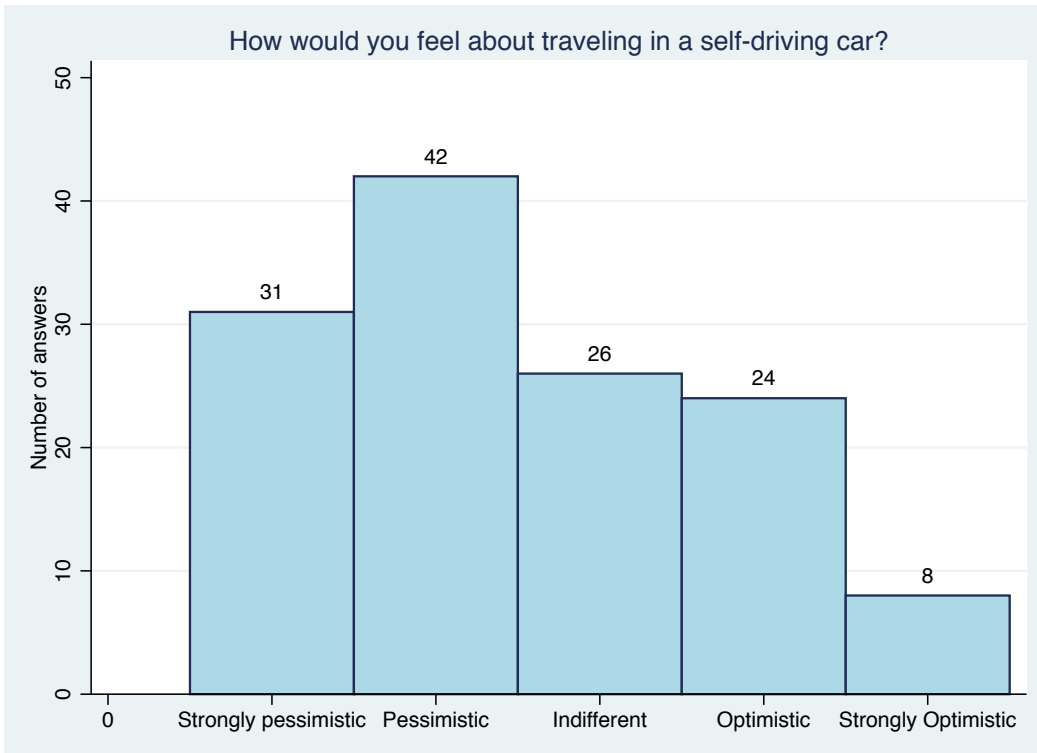2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

The increased incorporation of AI into everyday life and technology is desirable.
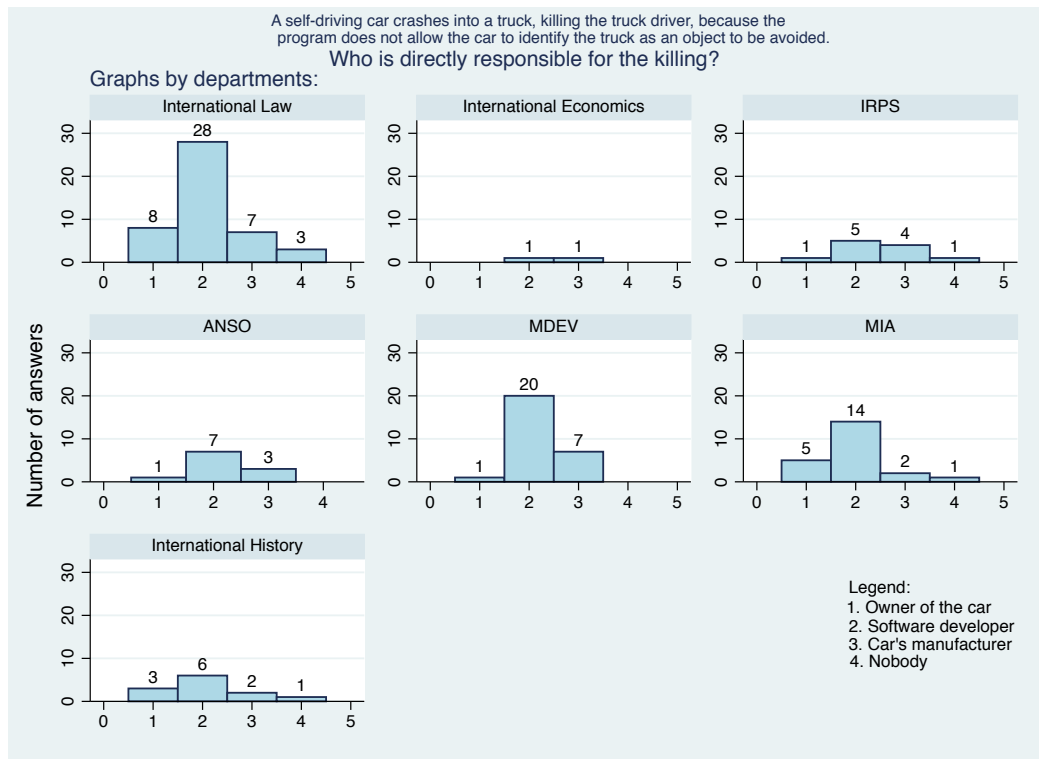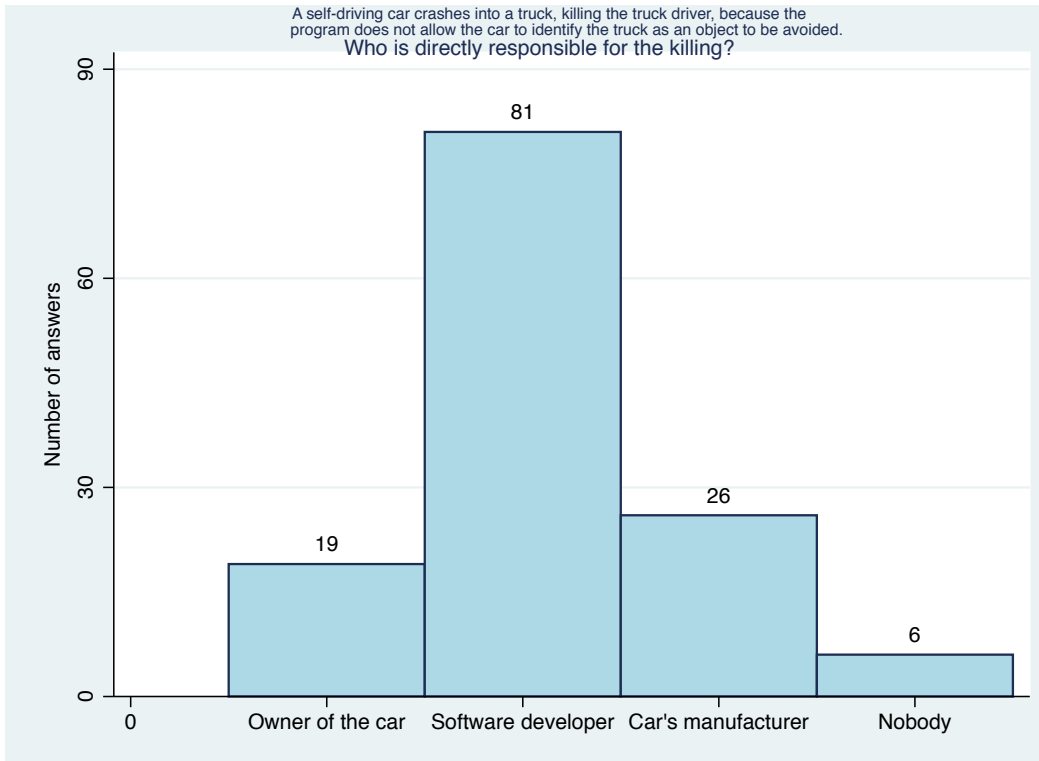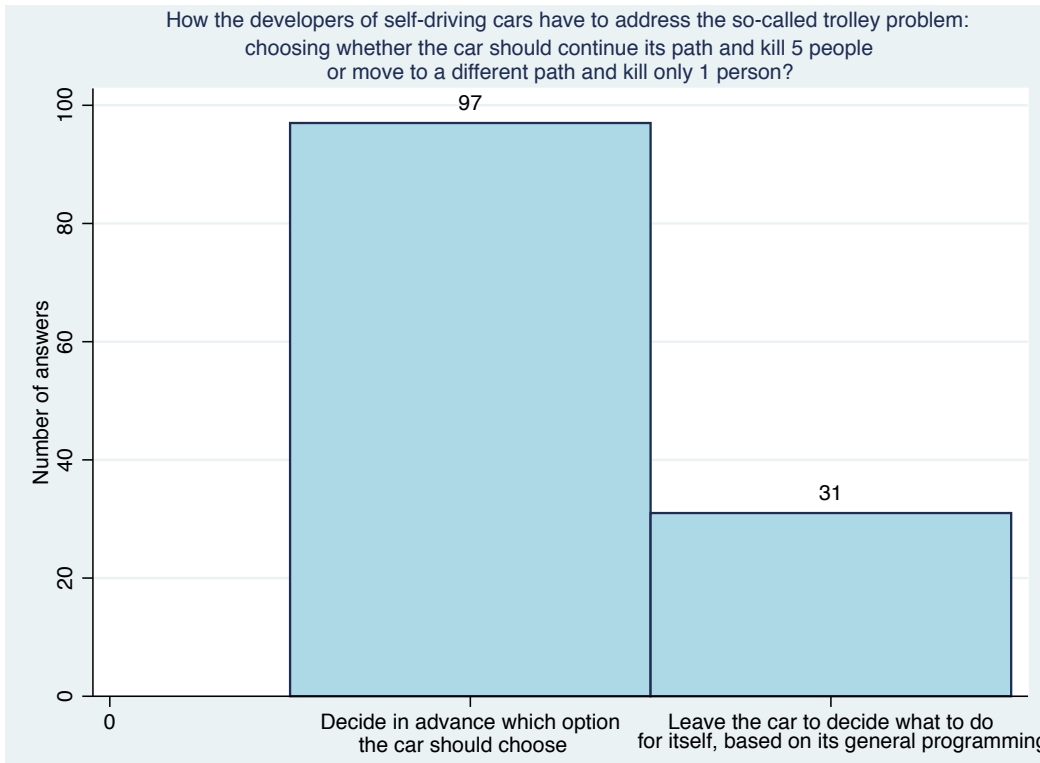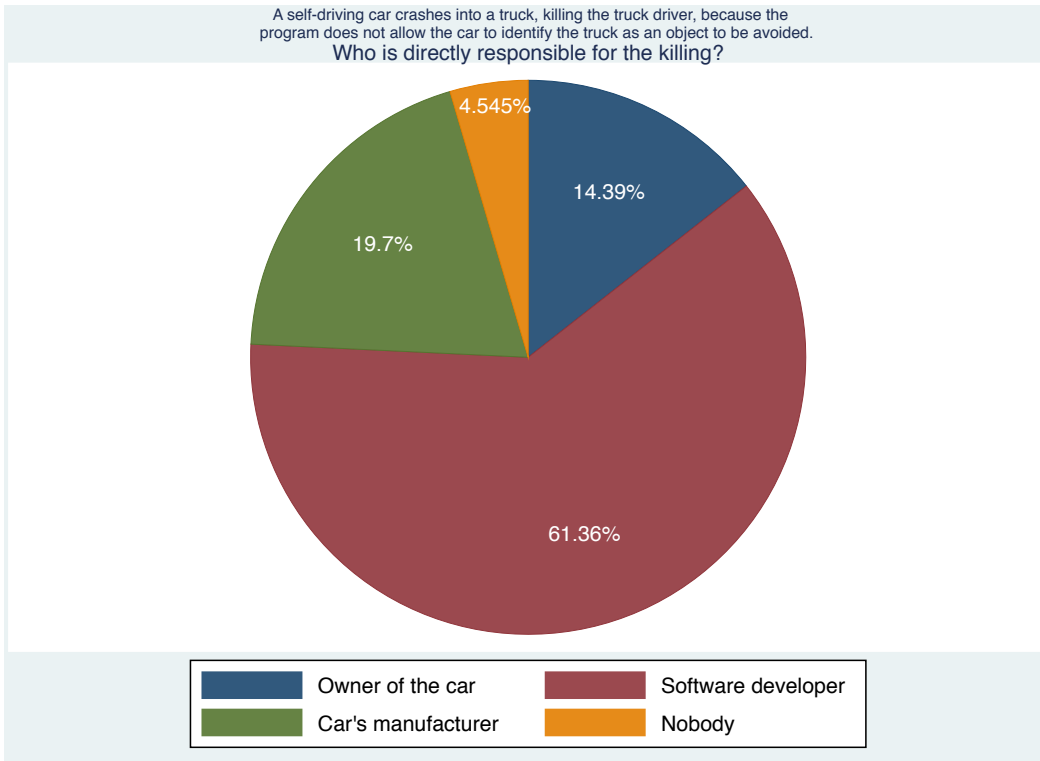## Do you agree with this statement?

Strongly disagree — Disagree — Indifferent — Agree — Strongly agree

How would you feel about traveling in a self-driving car?

How would you feel about traveling in a self-driving car?

A self-driving car crashes into a truck, killing the truck driver, because the
program does not allow the car to identify the truck as an object to be avoided.
Who is directly responsible for the killing?

A self-driving car crashes into a truck, killing the truck driver, because the
program does not allow the car to identify the truck as an object to be avoided.
Who is directly responsible for the killing?

Graphs by departments:

Legend:
1. Owner of the car
2. Software developer
3. Car's manufacturer
4. Nobody

A self-driving car crashes into a truck, killing the truck driver, because the
program does not allow the car to identify the truck as an object to be avoided.
Who is directly responsible for the killing?

4.545%

14.39%

19.7%

61.36%

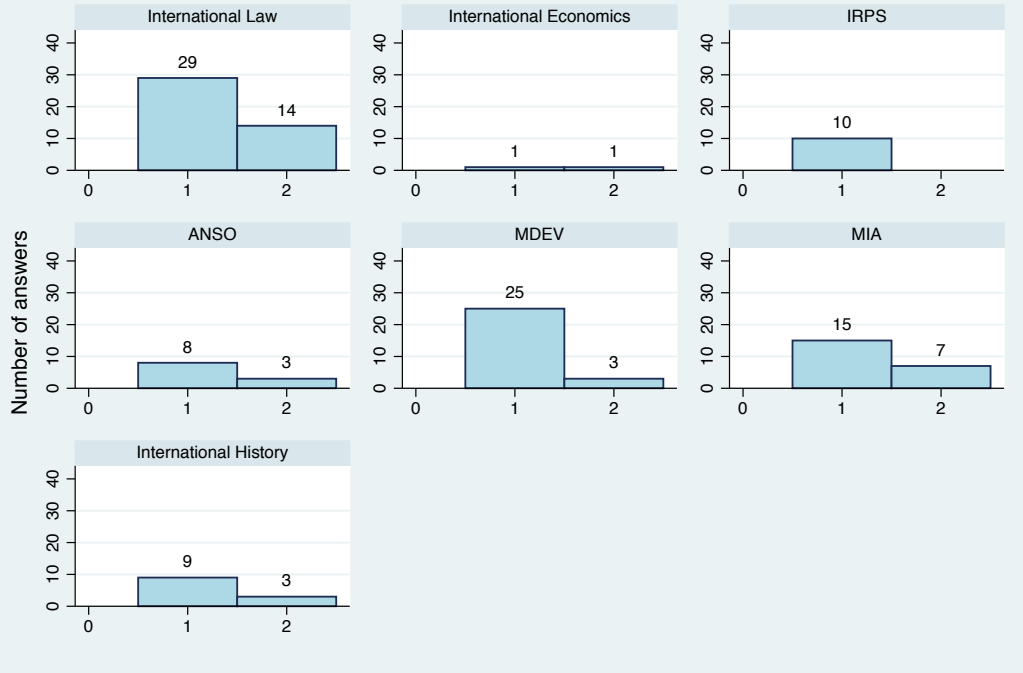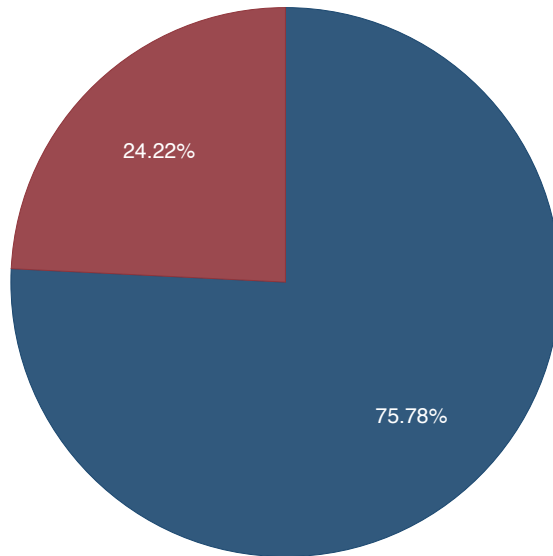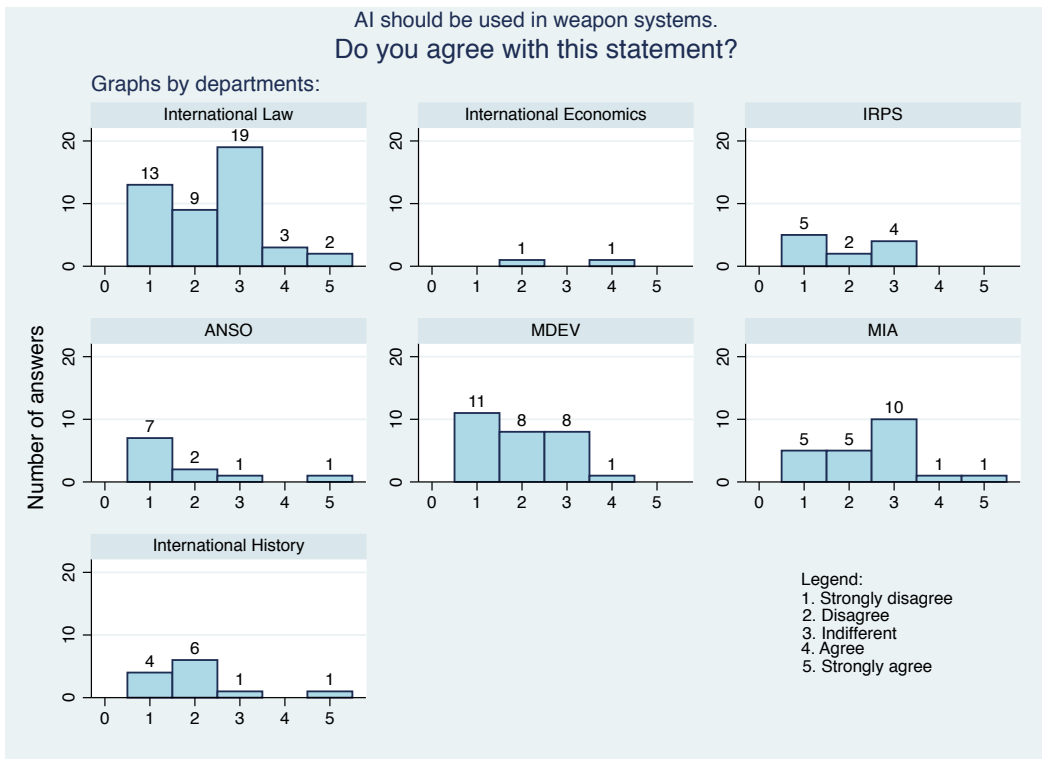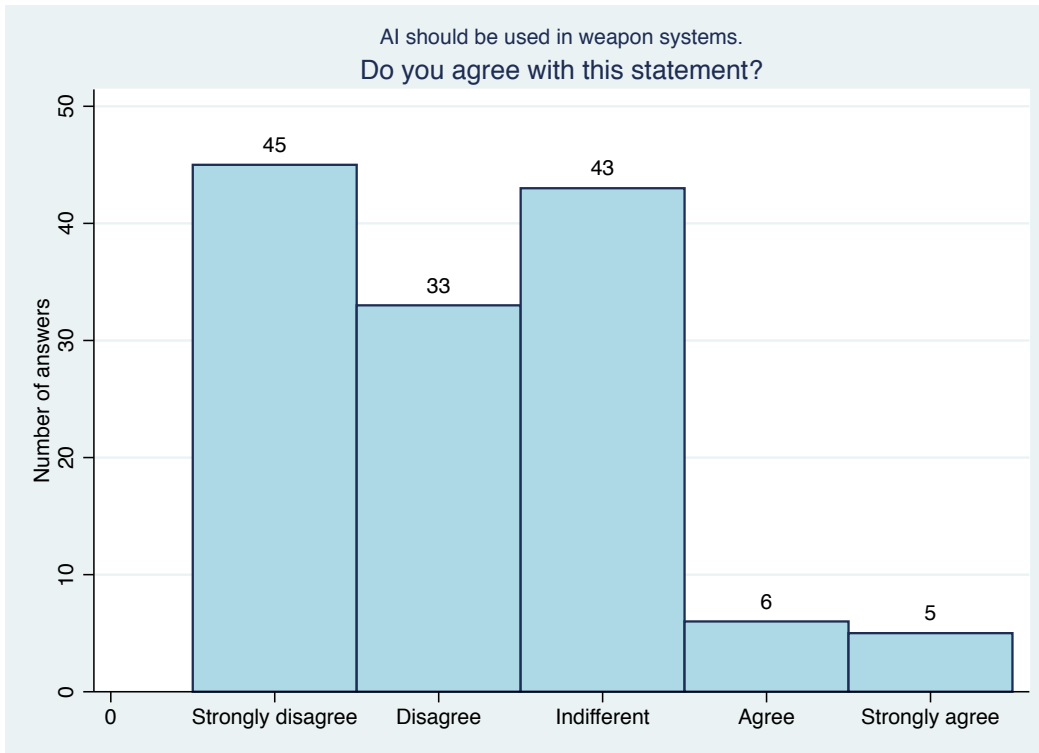|			
■ Owner of the car		■ Software developer	
■ Car's manufacturer		■ Nobody	

How the developers of self-driving cars have to address the so-called trolley problem:
choosing whether the car should continue its path and kill 5 people
or move to a different path and kill only 1 person?

97

31

Number of answers

Decide in advance which option
the car should choose

Leave the car to decide what to do
for itself, based on its general programming

How the developers of self-driving cars have to address the so-called trolley problem: choosing whether the car should continue its path and kill 5 people or move to a different path and kill only 1 person?
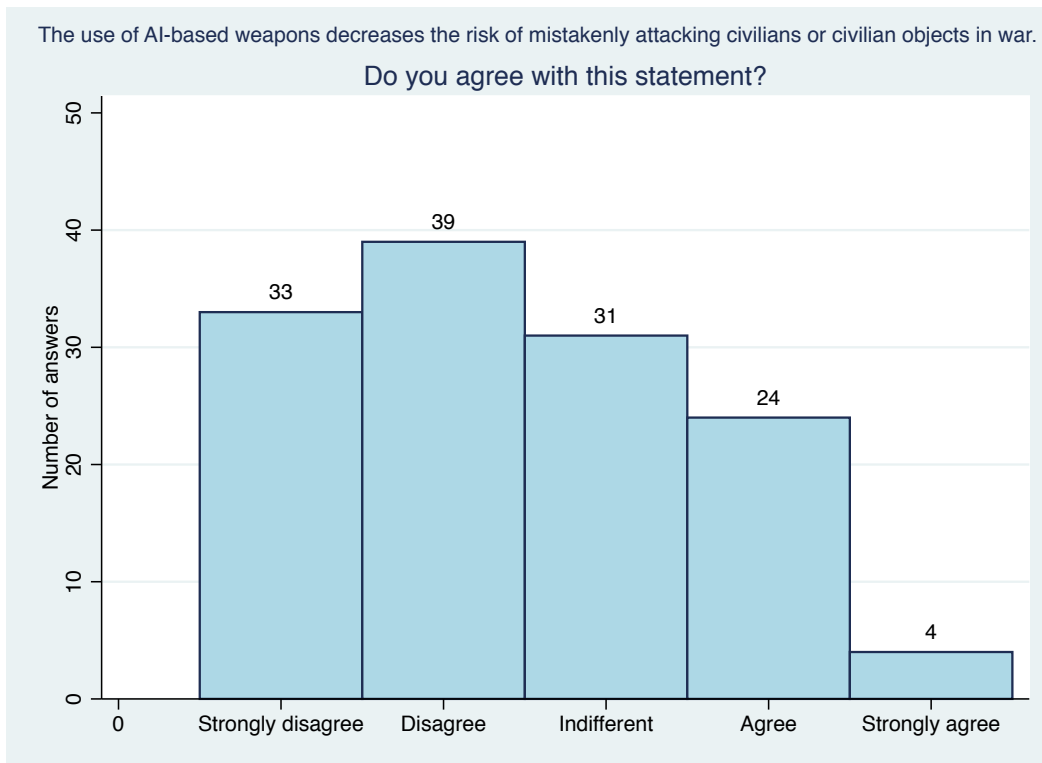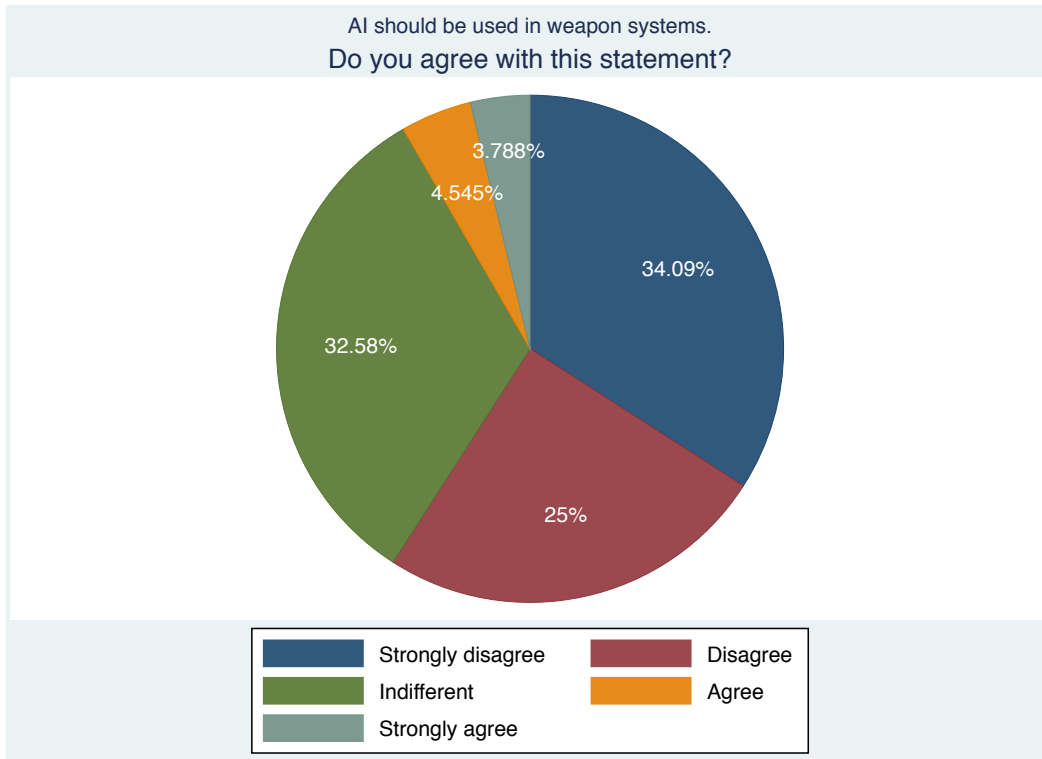

How the developers of self-driving cars have to address the so-called trolley problem: choosing whether the car should continue its path and kill 5 people or move to a different path and kill only 1 person?
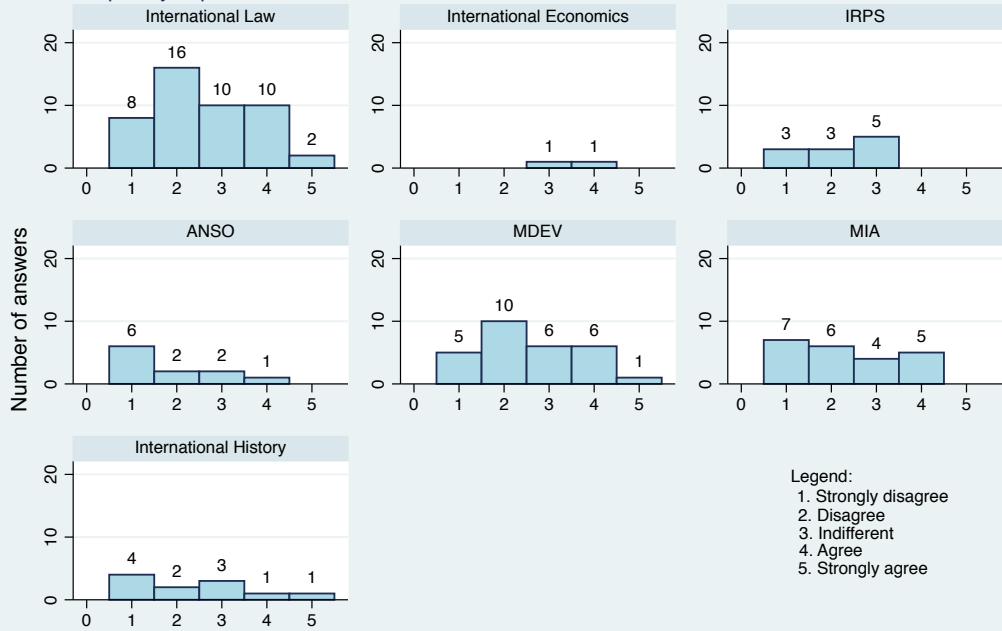

24.22%

75.78%

Decide in advance which option the car should choose

Leave the car to decide what to do for itself, based on its general programming

AI should be used in weapon systems.
Do you agree with this statement?

AI should be used in weapon systems.
Do you agree with this statement?

Graphs by departments:

Legend:
1. Strongly disagree
2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

AI should be used in weapon systems.
Do you agree with this statement?

34.09%

25%

32.58%

4.545%

3.788%

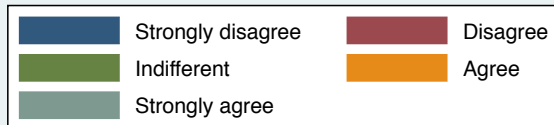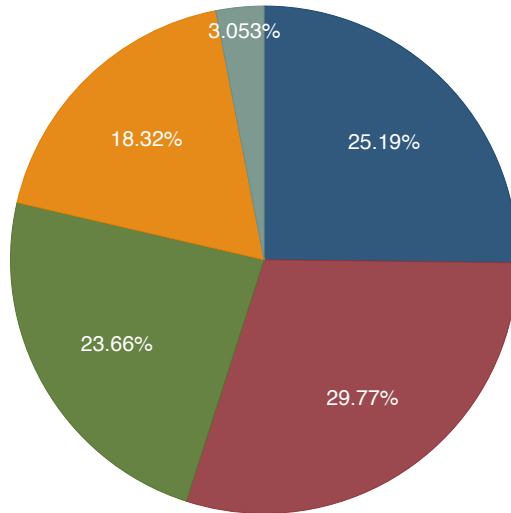Strongly disagree | Disagree
Indifferent | Agree
Strongly agree

The use of AI-based weapons decreases the risk of mistakenly attacking civilians or civilian objects in war.
Do you agree with this statement?

33 39 31 24 4

Number of answers

0 Strongly disagree Disagree Indifferent Agree Strongly agree

The use of AI-based weapons decreases the risk of mistakenly attacking civilians or civilian objects in war.
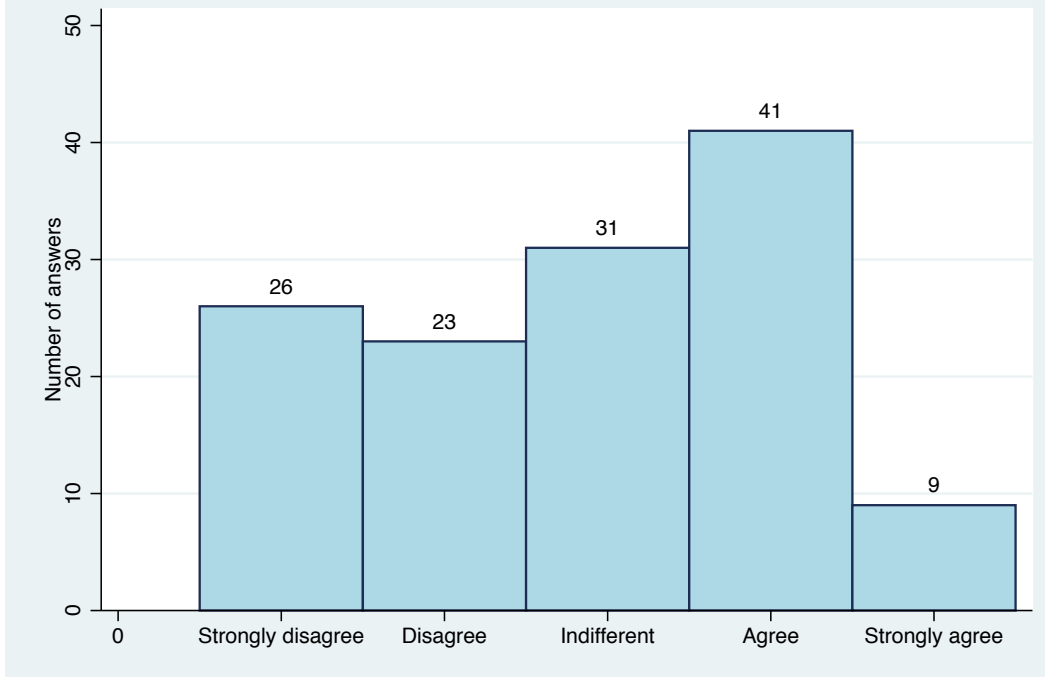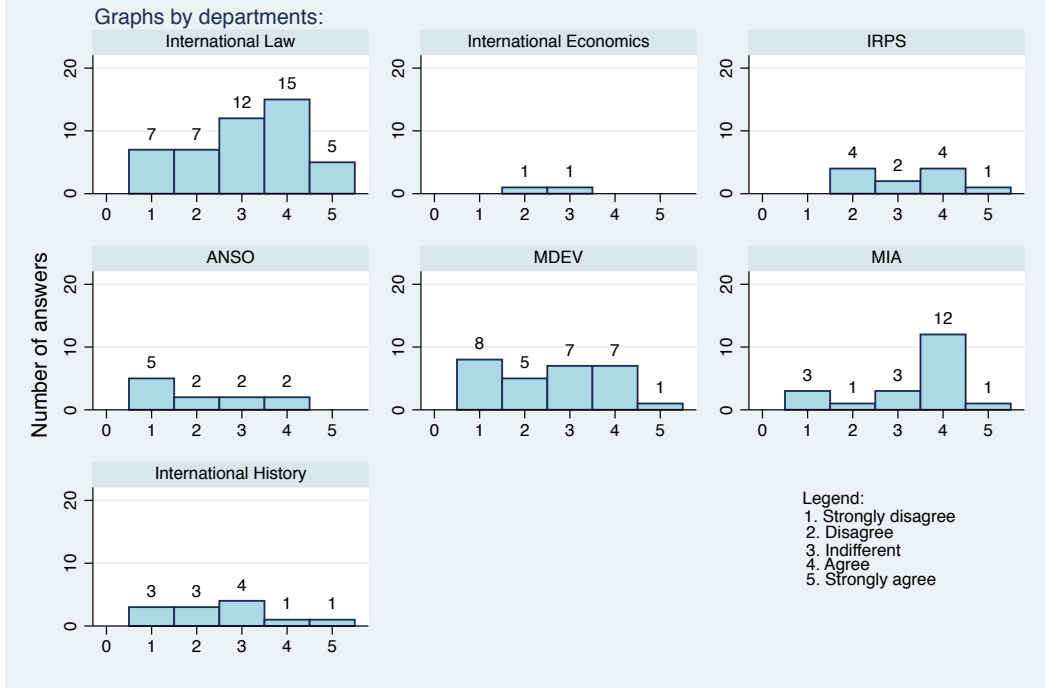## Do you agree with this statement?

Graphs by departments:

International Law

Value	Count
1	8
2	16
3	10
4	10
5	2

International Economics

Value	Count
3	1
4	1

IRPS

Value	Count
1	3
2	3
3	5

ANSO

Value	Count
1	6
2	2
3	2
4	1

MDEV

Value	Count
1	5
2	10
3	6
4	6
5	1

MIA

Value	Count
1	7
2	6
3	4
4	5

International History

Value	Count
1	4
2	2
3	3
4	1
5	1

Number of answers

Legend:
1. Strongly disagree
2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

The use of AI-based weapons decreases the risk of mistakenly attacking civilians or civilian objects in war.
Do you agree with this statement?

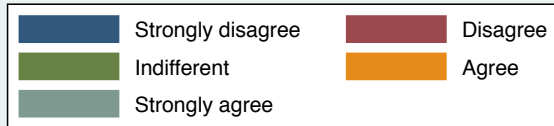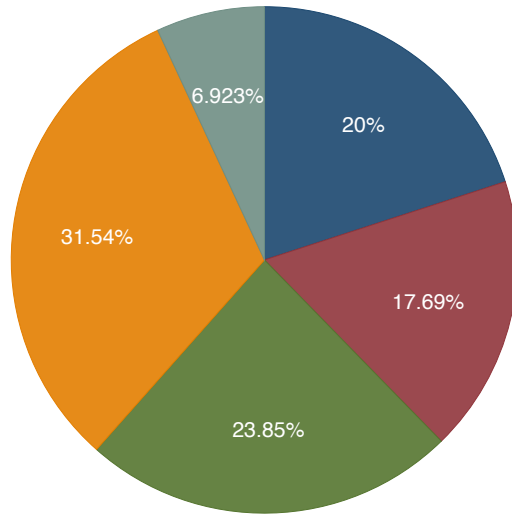| Response	Percentage
Strongly disagree	25.19%
Disagree	29.77%
Indifferent	23.66%
Agree	18.32%
Strongly agree	3.053%

AI must be used in AI-based weapons if it is proven that they will perform better than humans on the battlefield.
Do you agree with this statement?

AI must be used in AI-based weapons if it is proven that they will perform better than humans on the battlefield.
Do you agree with this statement?

AI must be used in AI-based weapons if it is proven that they will perform better than humans on the battlefield.
Do you agree with this statement?

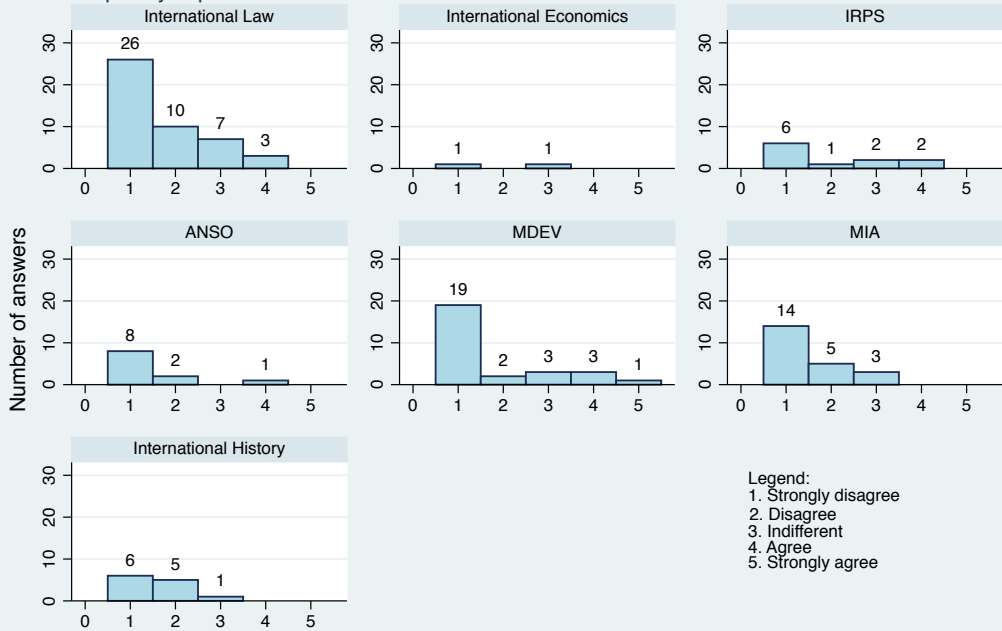|	
Strongly disagree	Disagree
Indifferent	Agree
Strongly agree	

AI-based weapons must undertake military actions against non-human targets, without human supervision.
Do you agree with this statement?

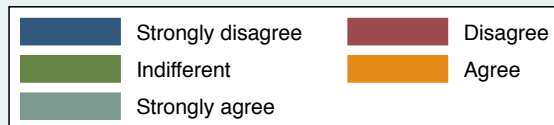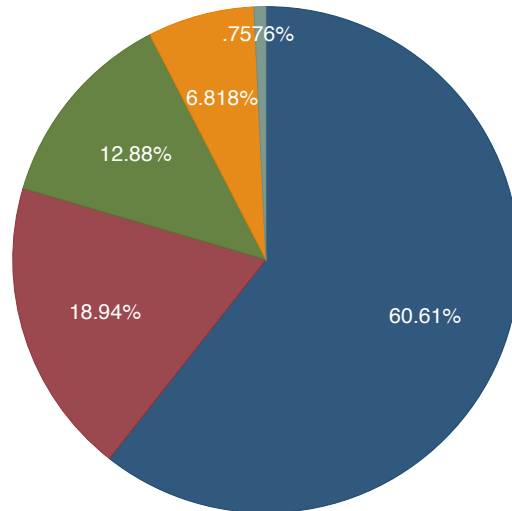AI-based weapons must undertake military actions against non-human targets, without human supervision.
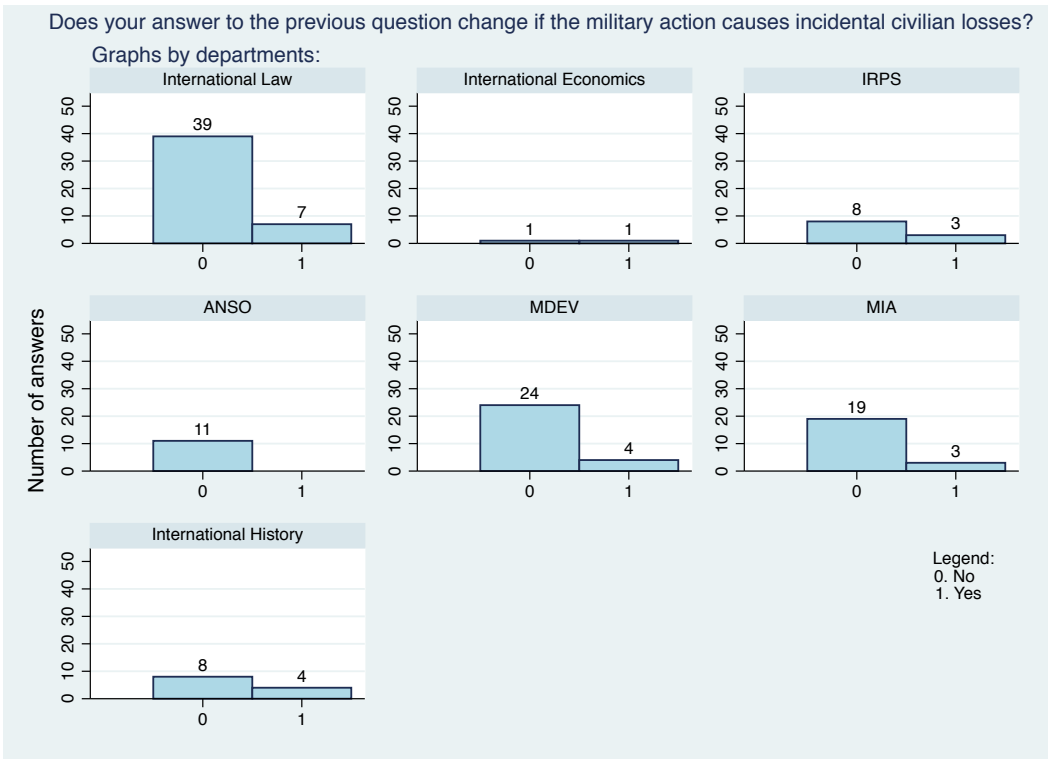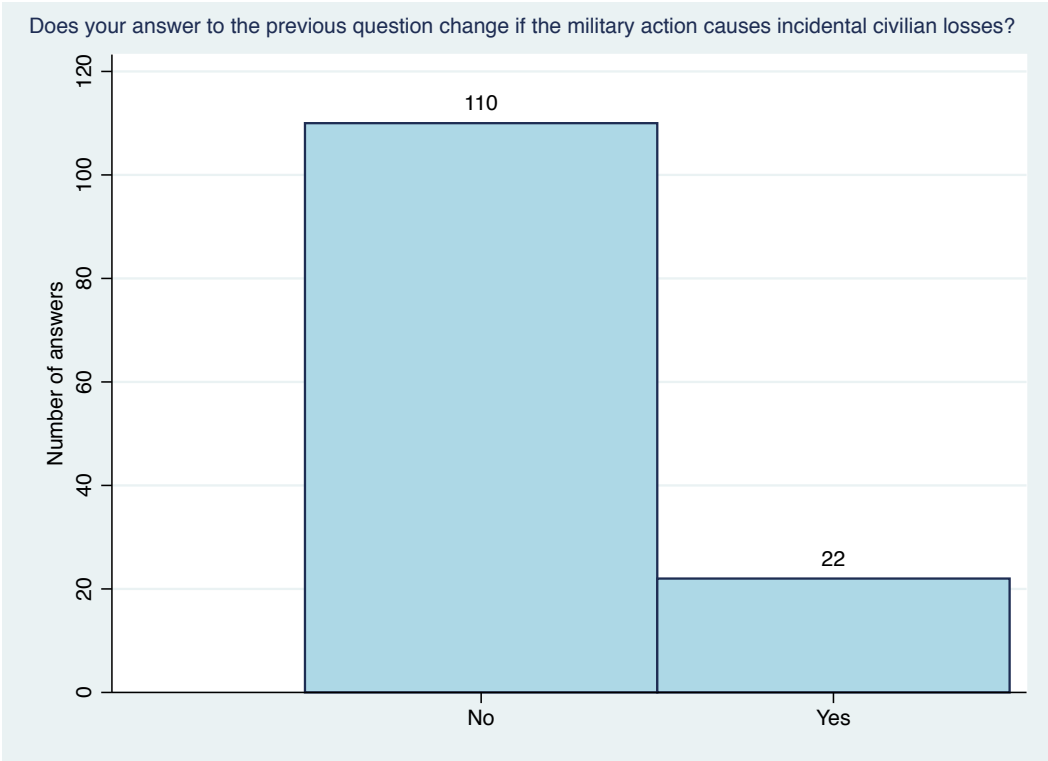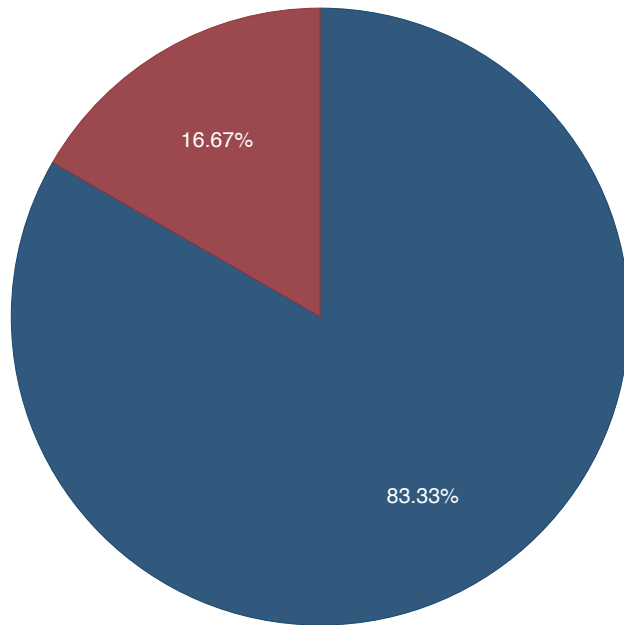## Do you agree with this statement?
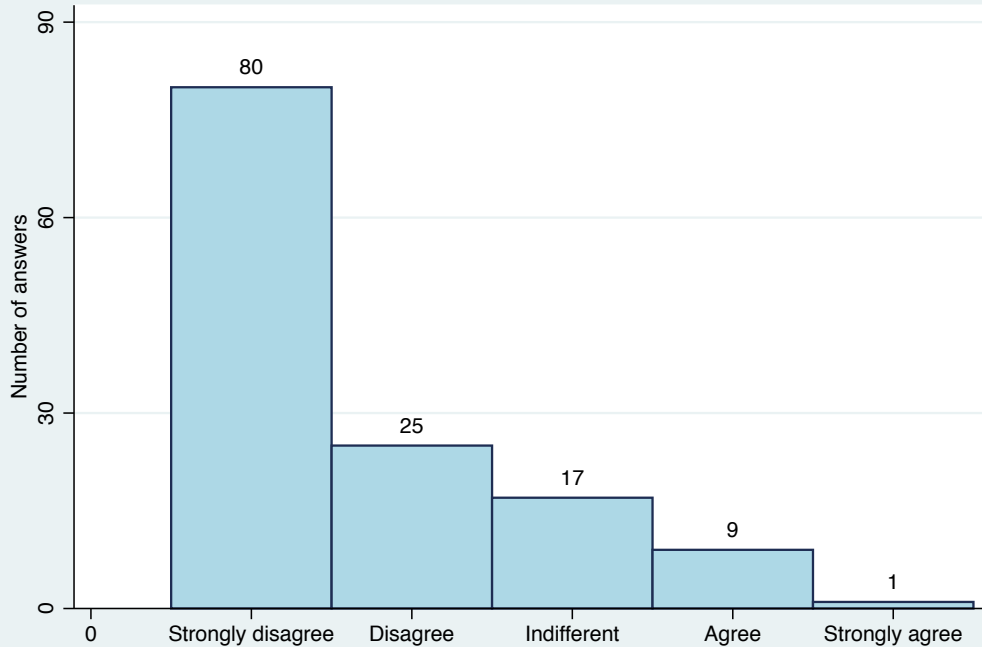
Graphs by departments:

AI-based weapons must undertake military actions against non-human targets without human supervision.
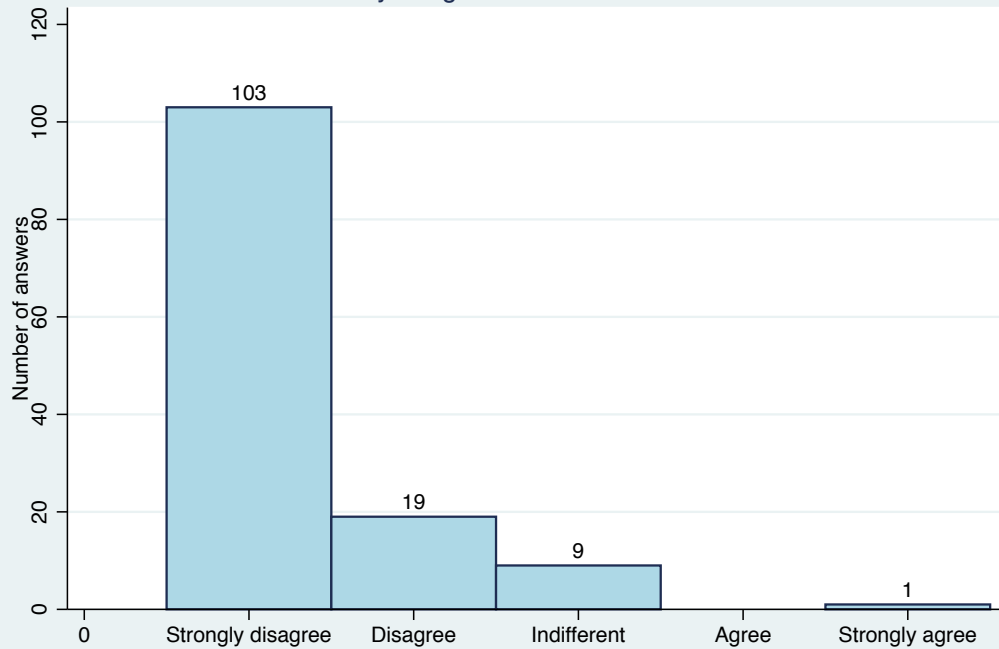## Do you agree with this statement?

Does your answer to the previous question change if the military action causes incidental civilian losses?

Does your answer to the previous question change if the military action causes incidental civilian losses?

Graphs by departments:

Legend:
0. No
1. Yes

Does your answer to the previous question change if the military action causes incidental civilian losses?

16.67%

83.33%

| No | Yes |

AI-based weapons must undertake military actions against human targets, without human supervision.
Do you agree with this statement?

103

19
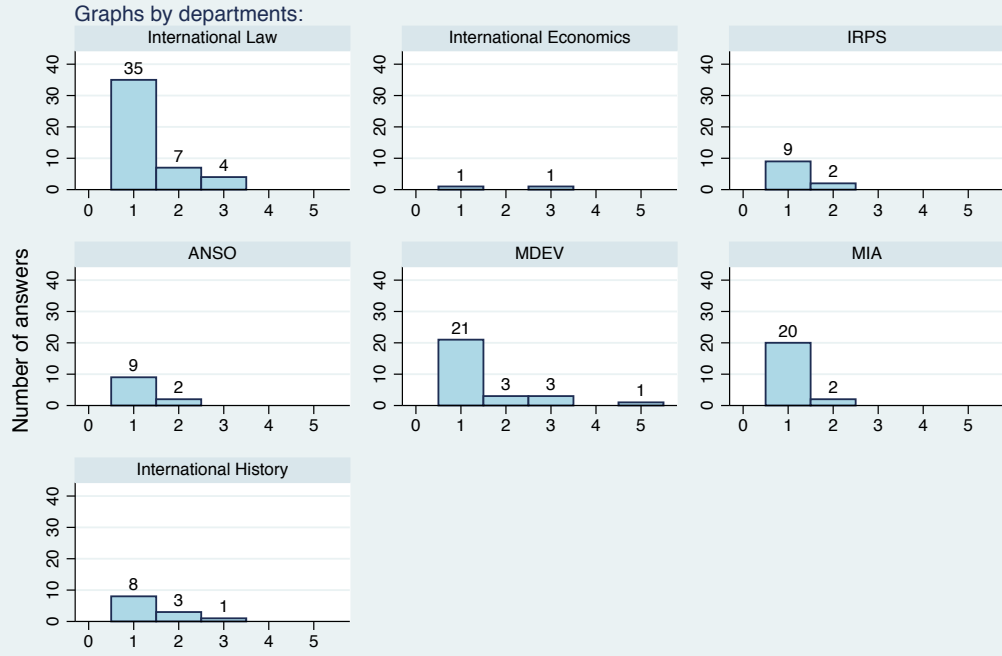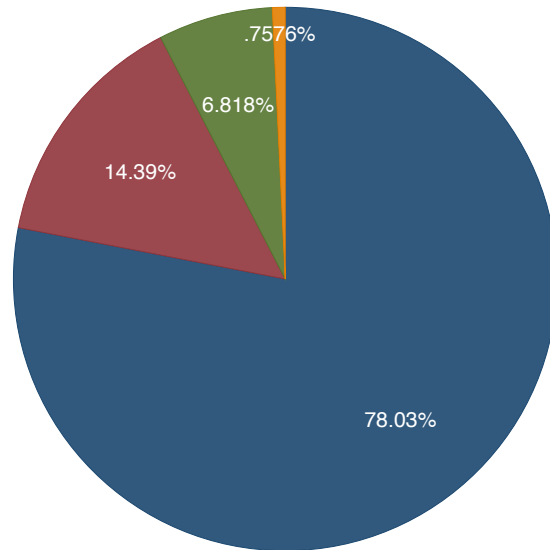
9

1

Number of answers

0   Strongly disagree   Disagree   Indifferent   Agree   Strongly agree

AI-based weapons must undertake military actions against human targets, without human supervision.
Do you agree with this statement?

Graphs by departments:

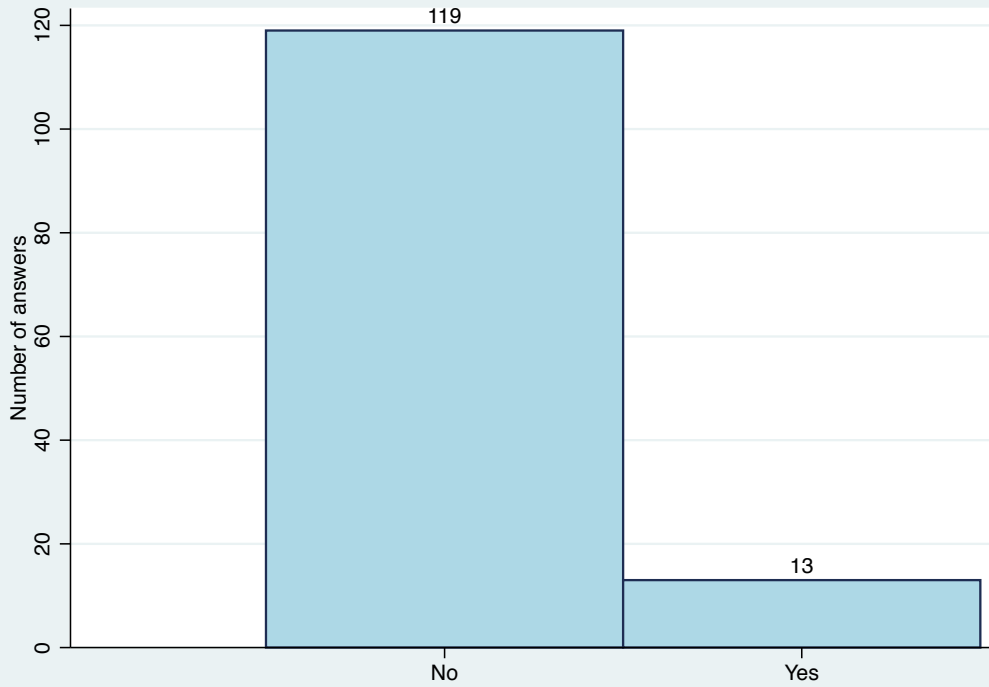**AI-based weapons must undertake military actions against human targets, without human supervision.**
Do you agree with this statement?

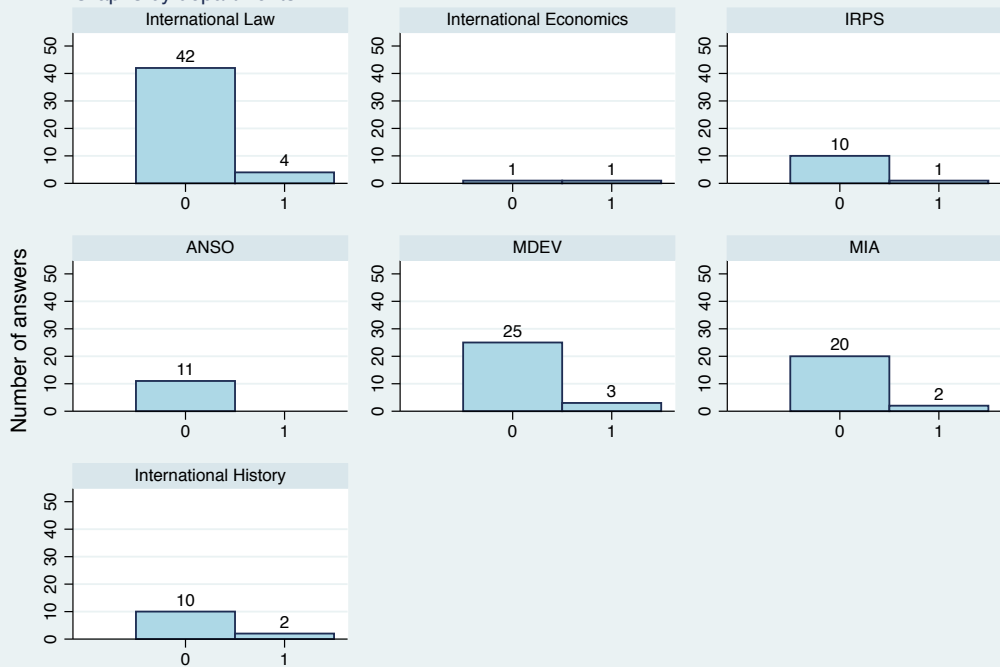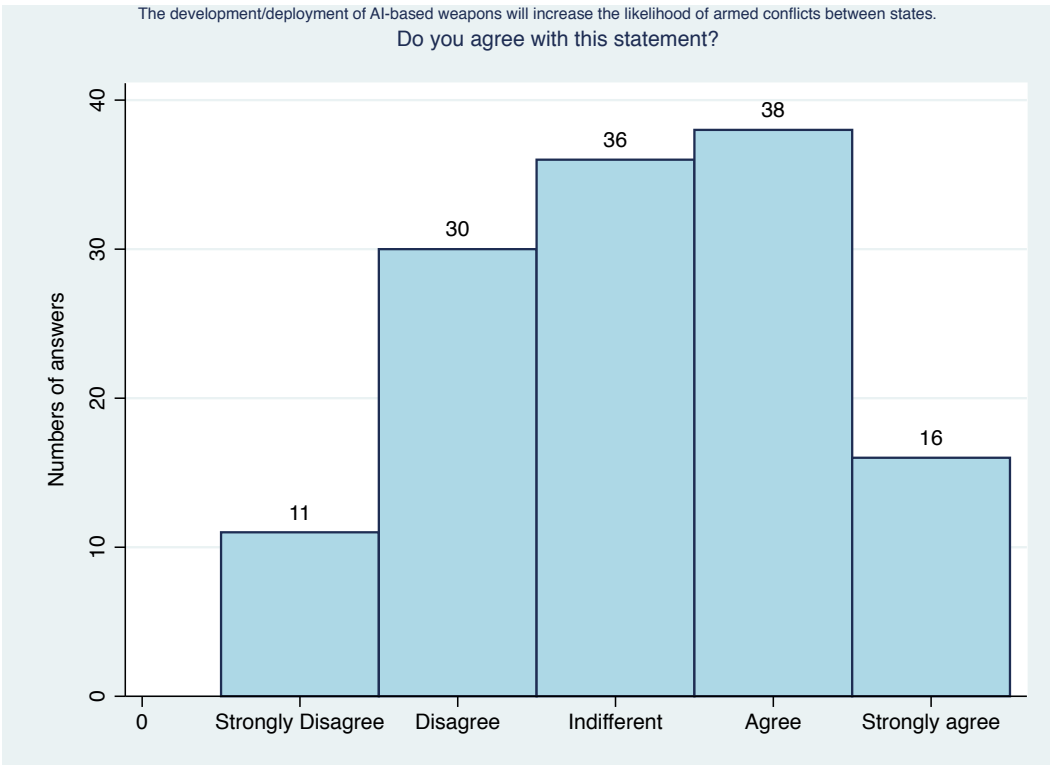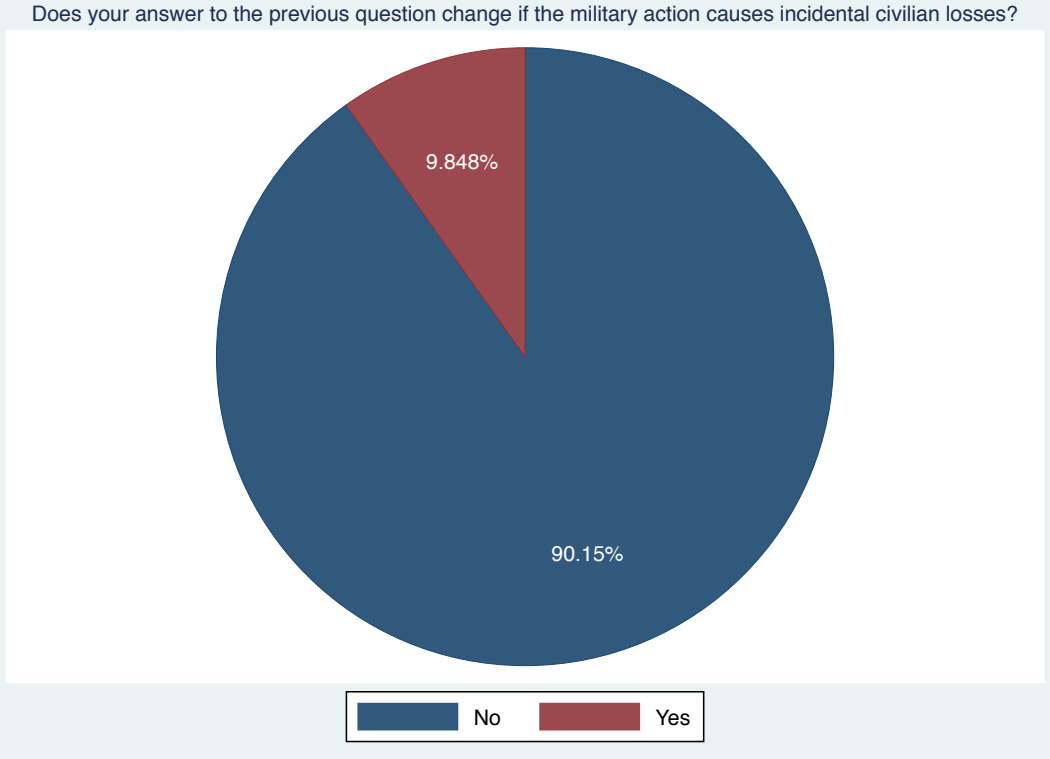Legend: Strongly disagree — Disagree — Indifferent — Strongly agree

Does your answer to the previous question change if the military action causes incidental civilian losses?

Does your answer to the previous question change if the military action causes incidental civilian losses?
Graphs by departments:

Does your answer to the previous question change if the military action causes incidental civilian losses?

9.848%

90.15%

No   Yes

The development/deployment of AI-based weapons will increase the likelihood of armed conflicts between states.
Do you agree with this statement?

11
30
36
38
16

Strongly Disagree   Disagree   Indifferent   Agree   Strongly agree

Numbers of answers

The development/deployment of AI-based weapons will increase the likelihood of armed conflicts between states.
Do you agree with this statement?

Graphs by departments:

Number of answers

Legend:
1. Strongly disagree
2. Disagree
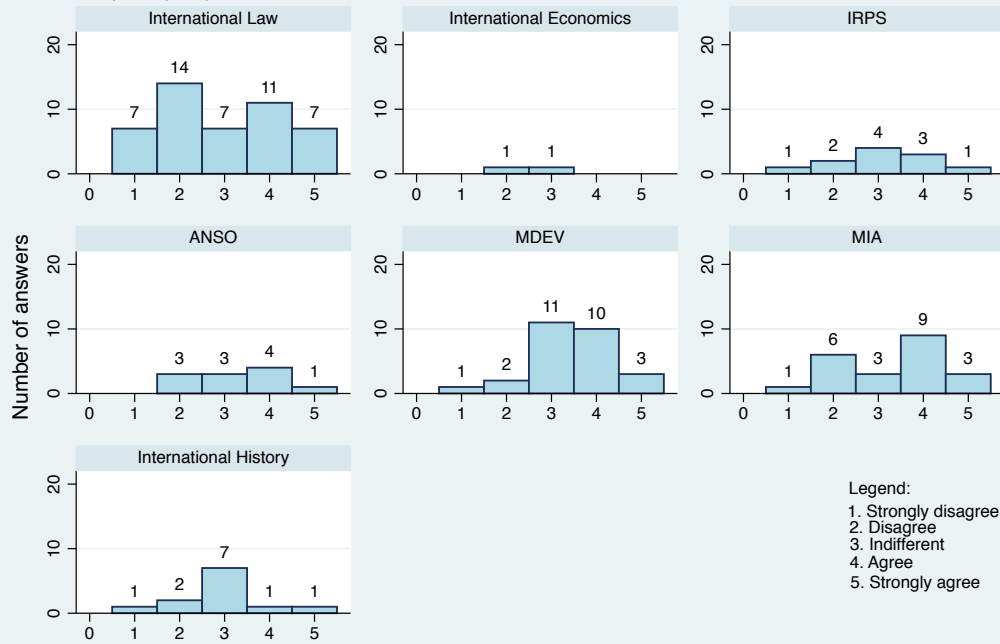3. Indifferent
4. Agree
5. Strongly agree

The development/deployment of AI-based weapons will increase the likelihood of armed conflicts between states.
Do you agree with this statement?

- Strongly disagree
- Disagree
- Indifferent
- Agree
- Strongly agree

The development/deployment of AI-based weapons will increase the likelihood of armed conflicts between states and armed groups.
Do you agree with this statement?

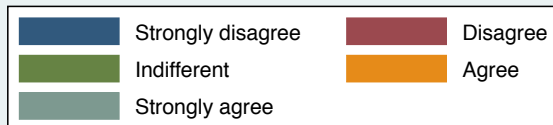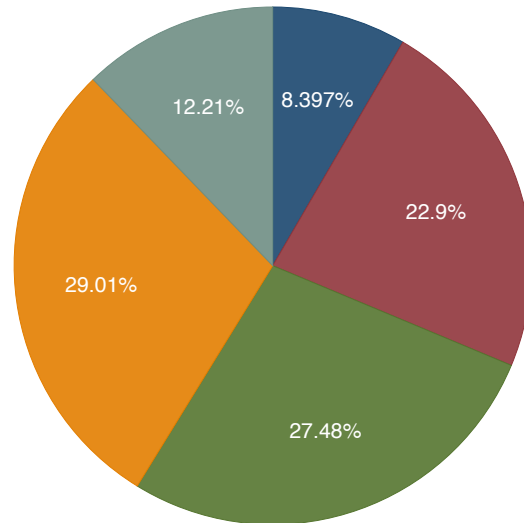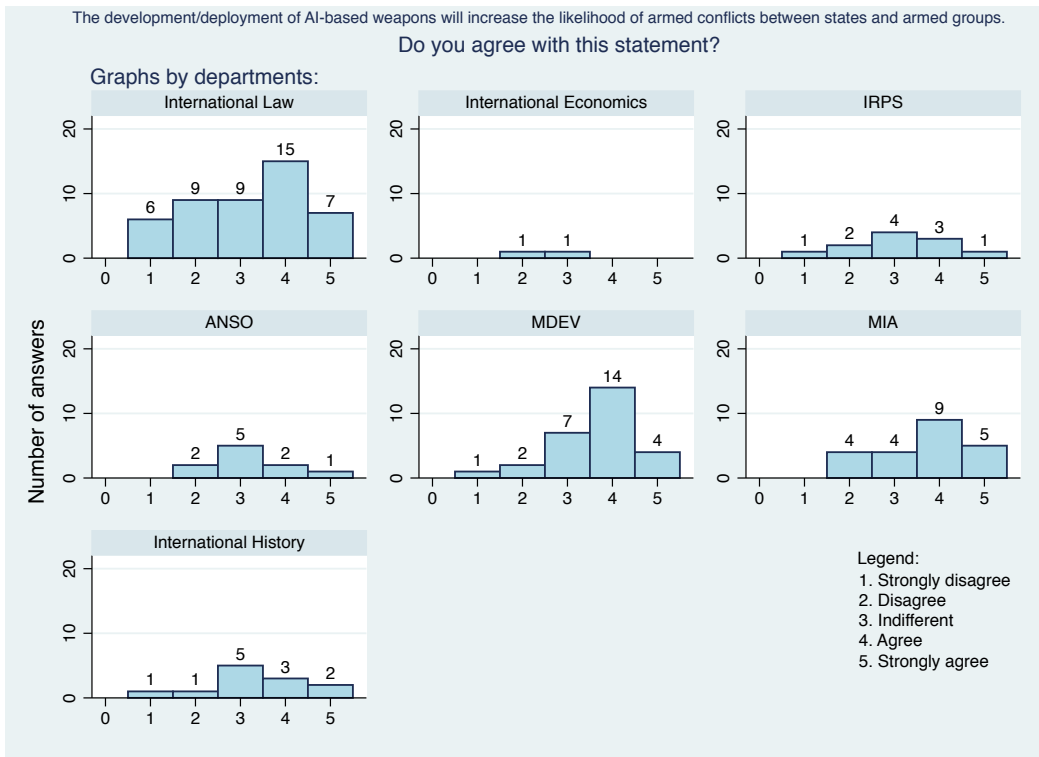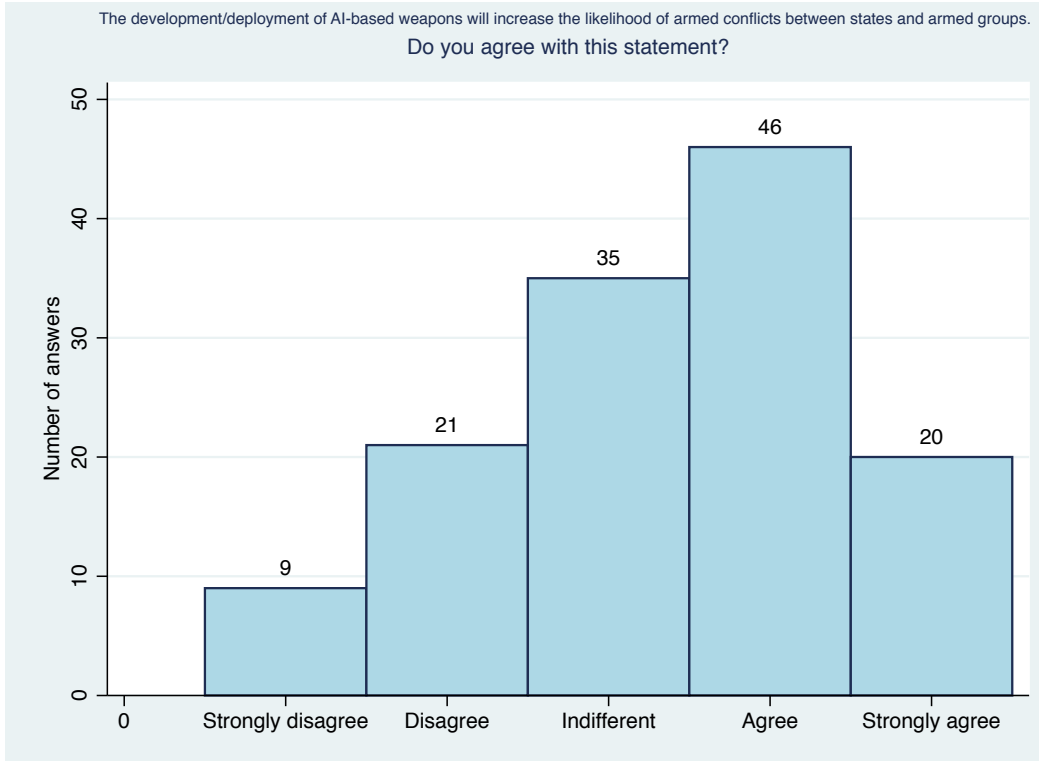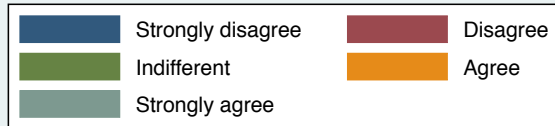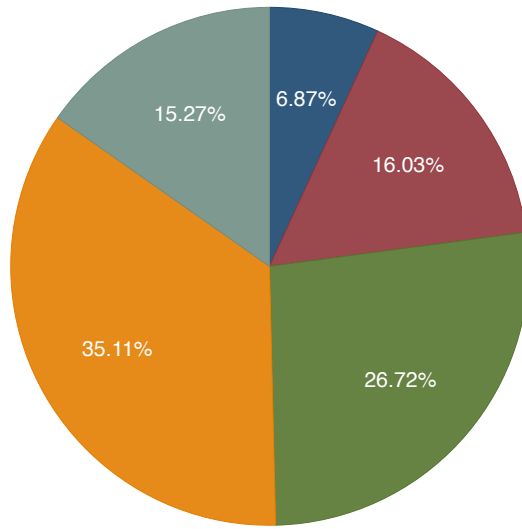The development/deployment of AI-based weapons will increase the likelihood of armed conflicts between states and armed groups.
Do you agree with this statement?

Graphs by departments:

Legend:
1. Strongly disagree
2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

The development/deployment of AI-based weapons will increase the likelihood of armed conflicts between states and armed groups.

Do you agree with this statement?

- **Strongly disagree** — 6.87%
- **Disagree** — 16.03%
- **Indifferent** — 26.72%
- **Agree** — 35.11%
- **Strongly agree** — 15.27%

An AI-based weapon, acting without human control, breaches the laws of war, killing a large number of civilians.

Who is responsible for the ensuing war crime?

Category	Number of Answers
The person deploying the weapon	84
Software developer	27
Manufacturer	10
Nobody	3
AI-based weapon itself	7

An AI-based weapon, acting without human control, breaches the laws of war, killing a large number of civilians.
Who is responsible for the ensuing war crime?

Graphs by departments:

Legend:
1. The person deploying the weapon
2. Software developer
3. Manufacturer
4. Nobody
5. AI-based weapon itself

An AI-based weapon, acting without human control, breaches the laws of war, killing a large number of civilians.
Who is responsible for the ensuing war crime?

- The person deploying the weapon
- Software developer
- Manufacturer
- Nobody
- AI-based weapon itself
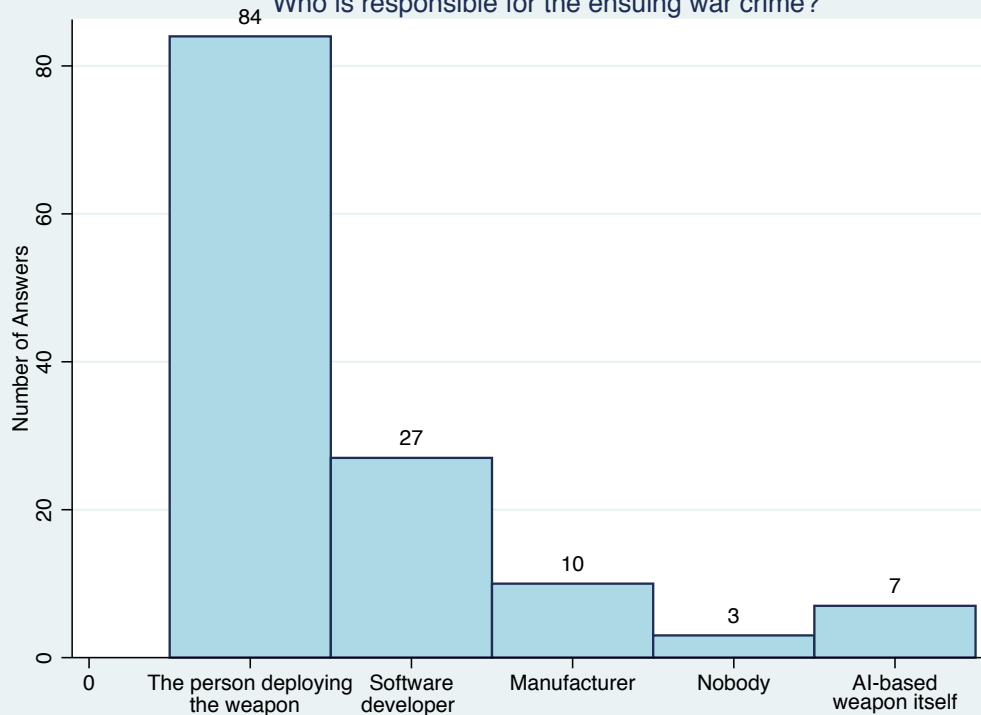
An AI-based weapon, acting under human control, breaches the laws of war, killing a large number of civilians
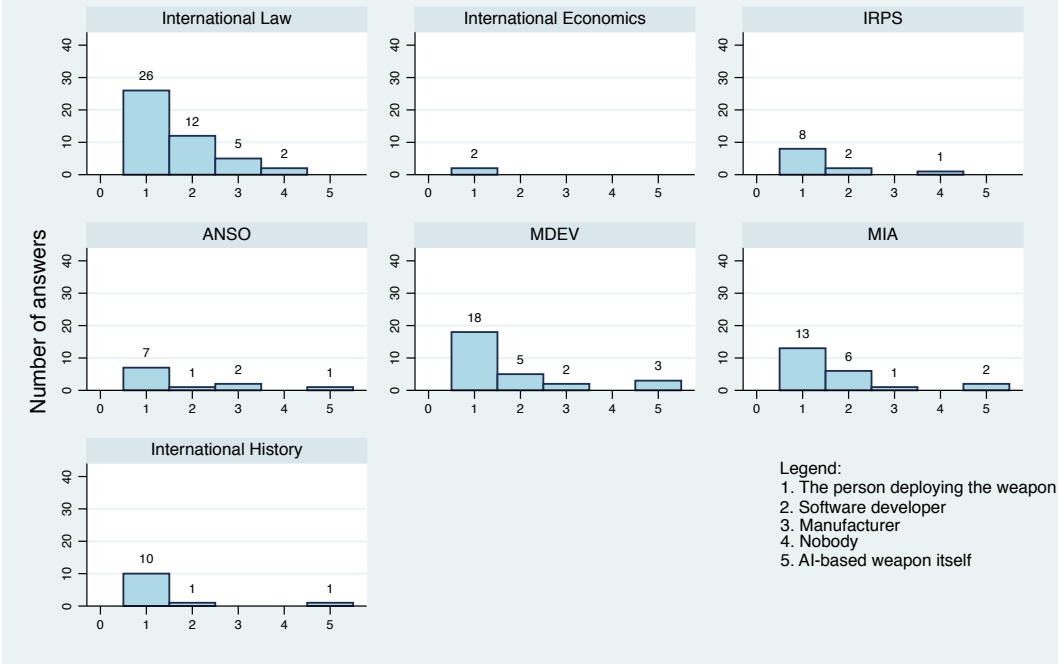
Who is responsible for the ensuing war crime?

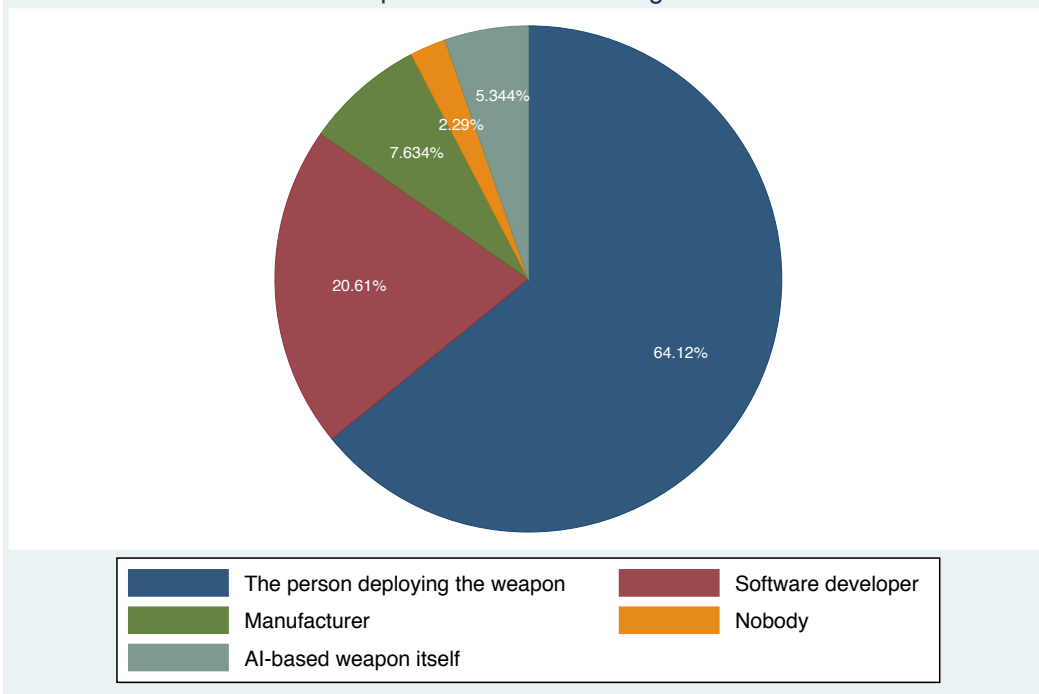An AI-based weapon, acting under human control, breaches the laws of war, killing a large number of civilians.

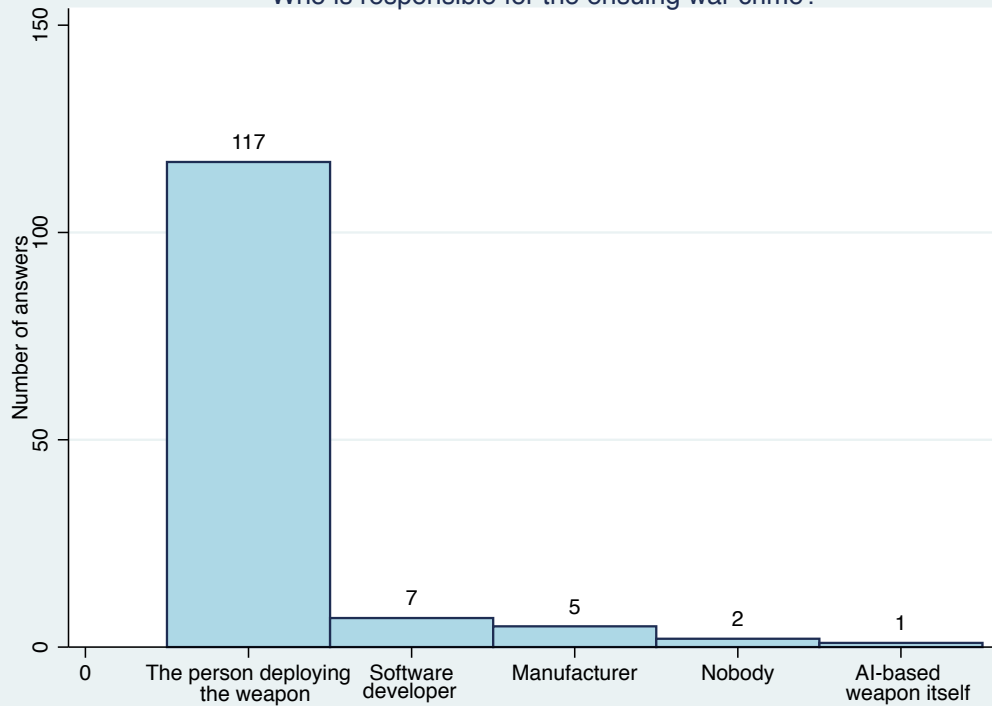## Who is responsible for the ensuing war crime?

Graphs by departments:

Legend:
1. The person deploying the weapon
2. Software developer
3. Manufacturer
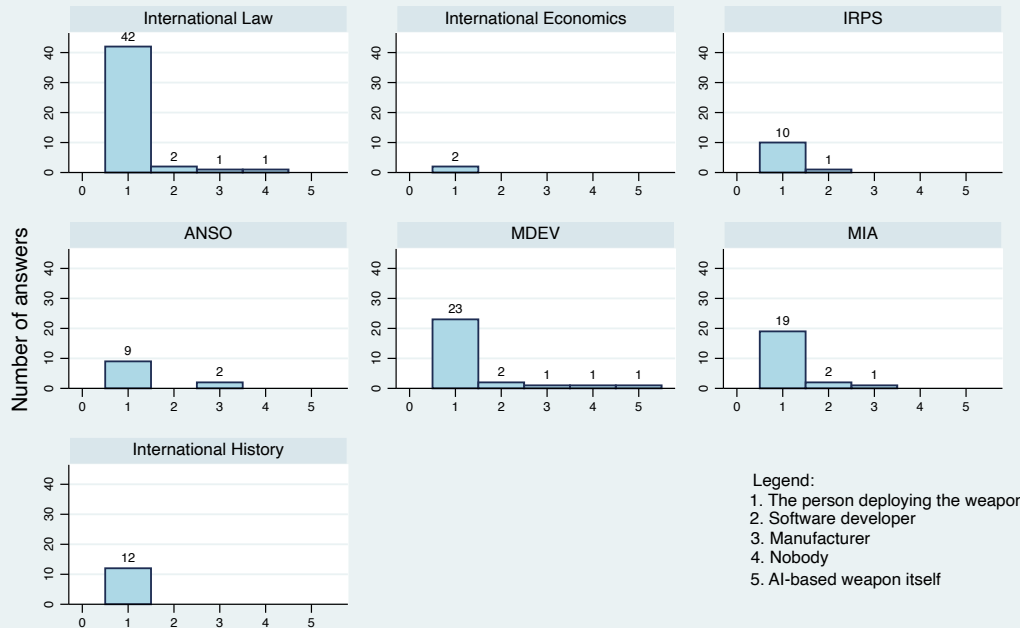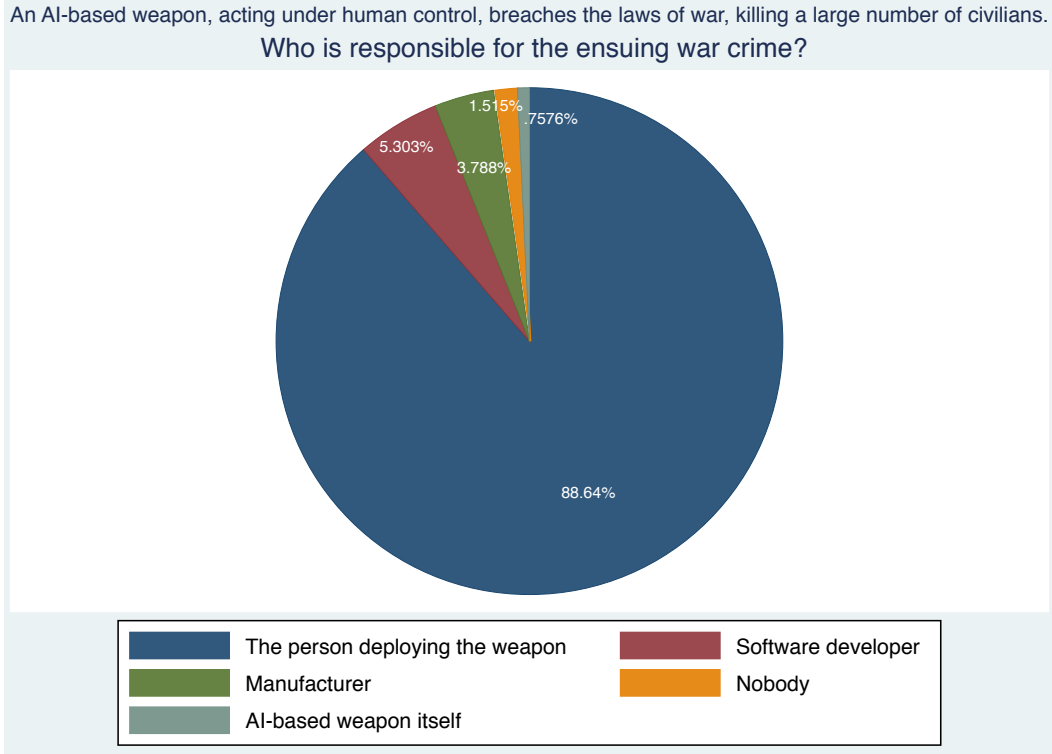4. Nobody
5. AI-based weapon itself

An AI-based weapon, acting under human control, breaches the laws of war, killing a large number of civilians.
Who is responsible for the ensuing war crime?

Legend:
- The person deploying the weapon
- Software developer
- Manufacturer
- Nobody
- AI-based weapon itself

(88.64%, 5.303%, 3.788%, 1.515%, .7576%)

III.   Raw Data

The raw data is contained in an online spreadsheet that can be accessed through this link:
https://docs.google.com/spreadsheets/d/1tXFttO_wpJzT-LZSWdh7XGnrPbStg00Y/edit#gid=1331969552

The final survey administered can also be accessed trough this link:
https://docs.google.com/forms/d/1l-namutSEu4MSqLkQQ-CQlQA3QaIUP8vK-zsmW0DjaA/edit

For the analysis of the data some standardization was carried out. To each label, numbers were attached so to facilitate the graphical representation and analysis. Below information is provided so that each number contained in the raw data can be easily associated with its corresponding label.

Question 1:
Female = 1
Male = 0
Other = 2

Question 3
Master student = 0
PhD student = 1

Question 4
International Law = 1
International Economics = 2
Political Science/International Relations = 3
Anthropology / Sociology = 4
Master in Development Studies = 5
Master in International Affairs = 6
International History = 7

Question 8, 9 , 13, 14, 15, 16, 18, 20, 21
Strongly Disagree = 1
Disagree = 2
Indifferent = 3
Agree = 4
Strongly Agree = 5

Question 7, 10
Strongly Pessimistic = 1
Pessimistic = 2
Indifferent = 3
Optmistic = 4
Strongly Optimistic = 5

Question 11
Owner of the car = 1
Software Developer = 2
Manufacturer of the car = 3
Nobody = 4

Question 12
Decide in advance = 1
Leave the car to decide = 2

Question 17, 19
Yes = 1
No = 0

Question 22, 23
The person who deployed the weapon = 1
Software developer = 2
Manufacturer = 3
Nobody = 4
AI-based weapon itself = 5