



# Task 1

## The Global Survey of Scientists

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# Task 1 Research Questions

- To better understand scientists'...
  - Development of interest in science
  - Experiences in education and careers
  - Work-life balance
  - Family support
  - Demographics
  - Access to resources needed to conduct science
  - Opportunities to contribute to the scientific enterprise

# Survey

- Launched on 1 May 2018
- Available in seven languages
- 32,346 respondents answered q1

## Global Survey of Scientists

Welcome to the Global Survey of Scientists. [To take the survey in English, click here.](#)

Bienvenue dans l'enquête mondiale destinée aux scientifiques. [Pour répondre aux questions de l'enquête en français, veuillez cliquer ici.](#)

欢迎参加全球科学工作者调查。 [要使用中文参加本调查，请单击此处。](#)

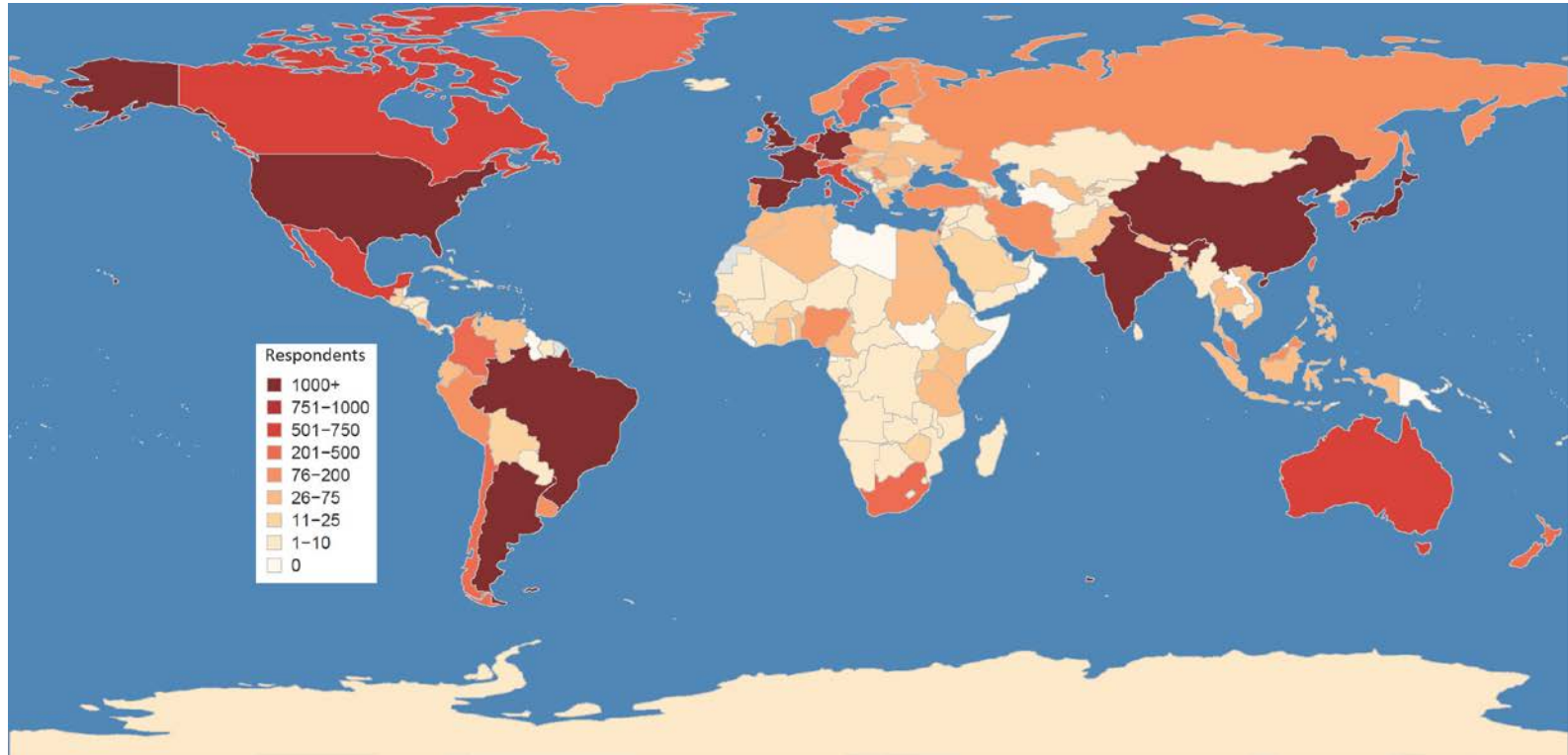
科学者向けグローバルアンケートにようこそ。 [日本語のアンケートに回答するには、ここをクリックします。](#)

Приветствуем Вас в Глобальном опросе ученых. [Чтобы пройти опрос на русском языке, нажмите здесь.](#)

Bienvenido/a a la Encuesta mundial de científicos y científicas. [Para hacer la encuesta en español, haga clic aquí.](#)

مرحبًا بك في الاستبيان العالمي للعلماء للمشاركة في الاستبيان باللغة العربية، انقر [هنا](#).

# Number of respondents by country



# Respondents by discipline & gender

Discipline	% Women	N
Astronomy	48	2597
Biology	69	2960
Chemistry	51	2698
Computer Science	55	3150
History and Philosophy of Science	46	324
Mathematics	43	3458
Mathematics – Applied	54	2146
Physics	37	7570
<b>Overall</b>	<b>50</b>	<b>*</b>

\* Total does not match number of respondents to q1 because

- there are other disciplines, and
- not every respondent provided their gender.



# Examining the Gender Gap in Science

- Using responses provided by about 30,000 scientists\* from 159 unique countries, we examined men's and women's experiences in science.
- Because one's experiences are affected by more than gender alone, we include the following potentially confounding variables in our analysis:
  - Age (as a proxy for career stage)
  - Employment sector
  - Level of development
  - Discipline
  - Geographic region
- The differences we report are statistically significant ( $p < 0.002$ ).

\* There were 32,346 responses to the first question. Our analyses include only the subset of respondents that provided responses to each of the questions used in the analysis.

# Findings

- The only item we examined where there was not a statistically significant difference between the responses of men and women is the timing of when the respondent chose their field.
- In every other item we examined, we found gender differences after accounting for any confounding factors.
- Men and women do not have the same experiences.
- Women's experiences are consistently less positive than men's.

# Some specific findings

Gender differences persist after accounting for discipline, employment sector, age, geographic region, and development index.

All disciplines, employment sectors, and geographic regions are categorical variables and included in every model. Age and development index are continuous variables and included in every model.



# Doctoral program experiences

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- “In my doctoral experience, I had support from my advisor or supervisor.”
  - Men respondents were **more likely** to **agree** than women respondents.
- “Have there been any significant interruptions in your doctoral studies?”
  - Women respondents were **1.6 times more likely** to say **yes**.

# Current workplace experiences

- **“At my current job, my employer treats everyone fairly.”**
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- **“At my current job, my employer treats everyone fairly.”**
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- **“My co-workers are respectful of everyone.”**
  - Men respondents were more likely to agree.

# Career progress

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  - Men respondents were **more likely** than women respondents to indicate a **faster** progression.
- “Compared to your colleagues in your workplace with similar qualifications as yours, do you think your salary / pay is ... higher / similar / lower?”
  - Men respondents were **more likely** than women respondents to **say higher**

# Career-advancing resources & opportunities

## Resources

- Funding
- Office space
- Lab space

• Equipment

• Travel

• Clerical

• Employment

• Compensation

• Technical

• Access

• Access to scientific literature

• Support as a working parent

## Opportunities

- Given a talk as invited speaker
- Attended conference abroad
- Conducted research abroad

Men have, on average, more resources and more opportunities than women

- Even after accounting for age, discipline, employment sector, geographic region, and level of development

This differences compound over time

- Advised / supervised undergraduate students
- Advised / supervised graduate students
- Served on dissertation or thesis committee
- Given talks / interviews for the general public



# Discrimination

- **“I have never experienced discrimination.”**
  - **Men** respondents were **4.8 times more likely** than women respondents to indicate they had **never experienced discrimination**.

# Career influence on personal life

- **“Has your career influenced your decisions about children, marriage, or a similar long-term partnership?”**
  - **Women** respondents were **1.6 times more likely** than men respondents to say yes.



# Dual Careers

- **“Is your partner or spouse employed in your field?”**
  - **Women** respondents were **3.4 times more likely** than **men** respondents to say **yes**.

# Becoming a parent

- **“My career or rate of promotion slowed significantly when I became a parent.”**
  - **Women** respondents were **3.3 times more likely** than **men** respondents to indicate their **career or rate of promotion slowed significantly** after becoming a parent.

# Becoming a parent

- “My career or rate of promotion slowed significantly when I became a parent.”
  - **Women** respondents were **3.3 times more likely** than **men** respondents to indicate their **career or rate of promotion slowed significantly** after becoming a parent.
- “My work or career did not change significantly when I became a parent.”
  - **Men** respondents were **3.0 times more likely** than women respondents to say yes.

# Encountering sexual harassment

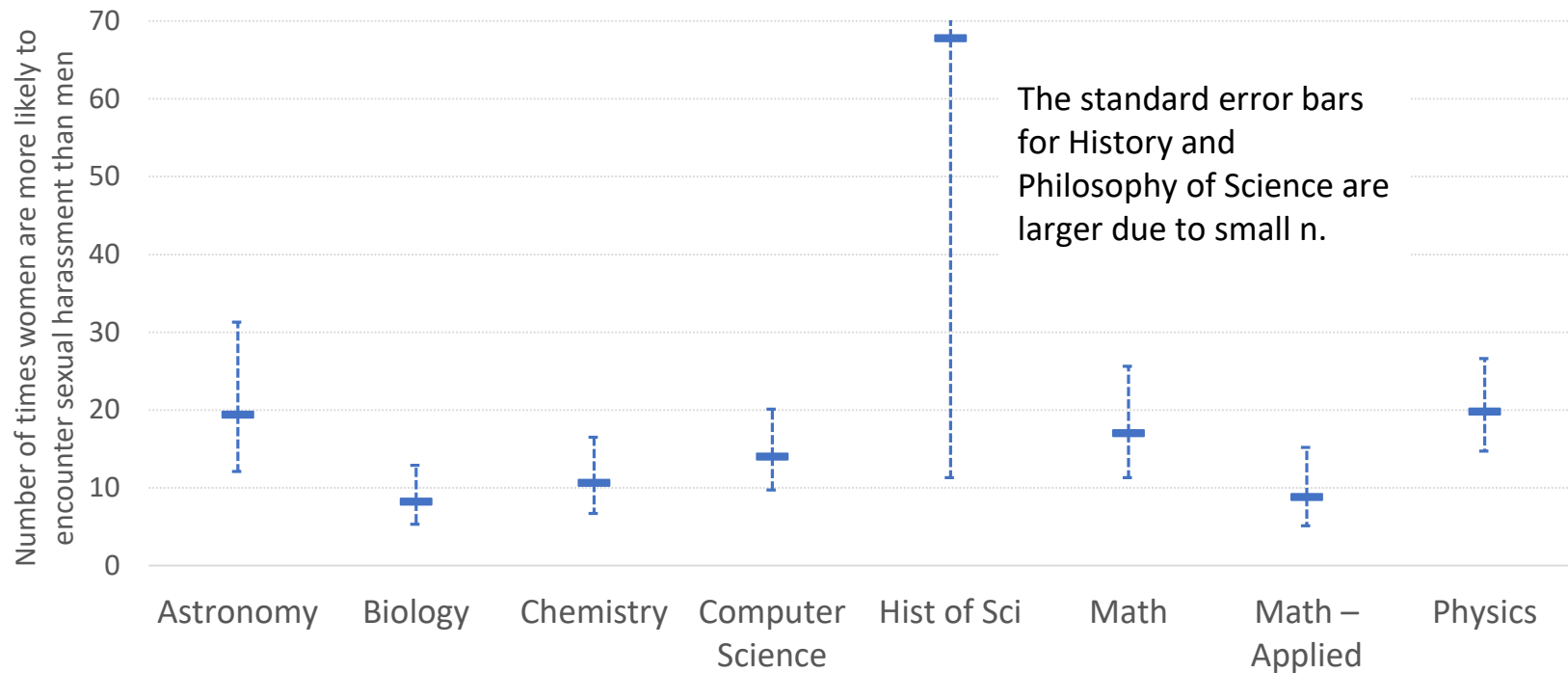
- **“I have encountered sexual harassment at school or work.”**
  - **Women** respondents were **14.4 times more likely** than **men** respondents to say **yes**.

# Encountering sexual harassment: More granular analysis

Examine the experience of women

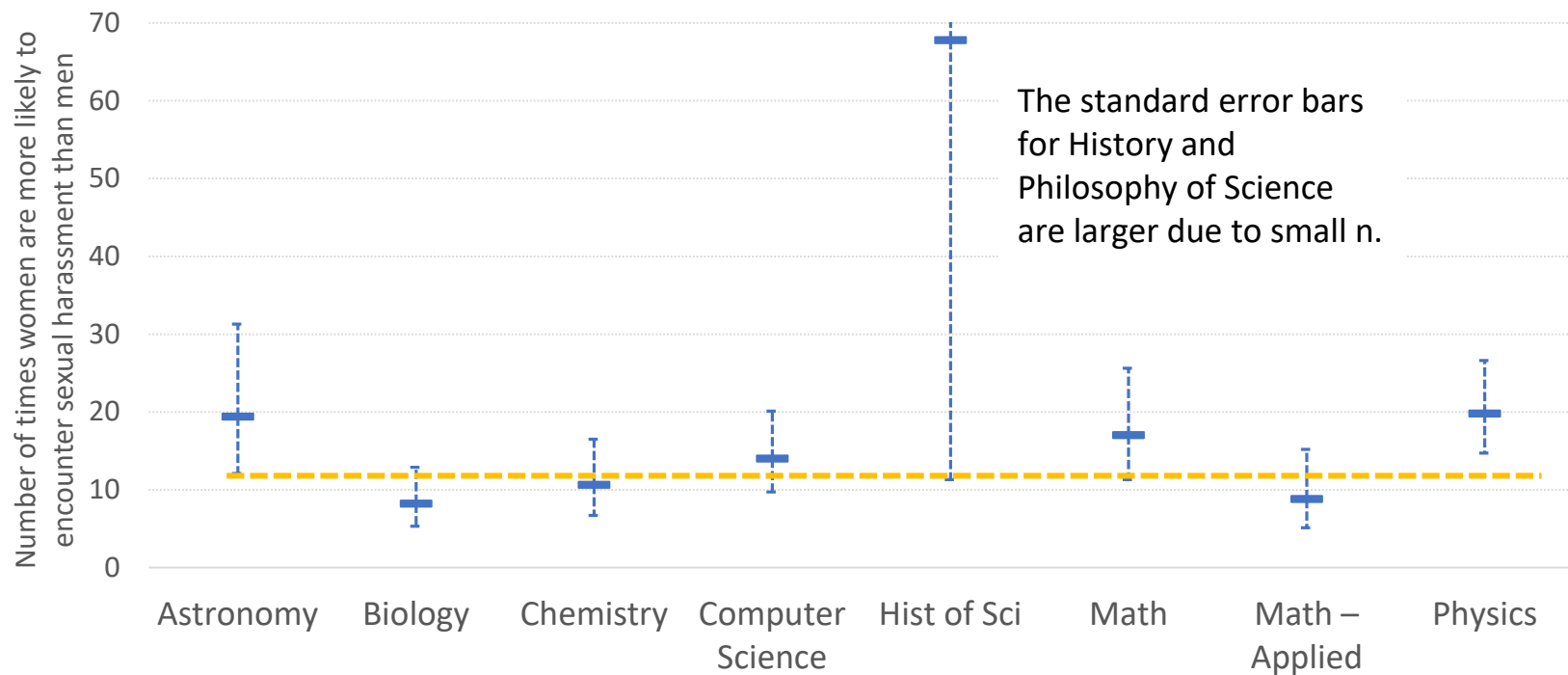
- In each discipline
- In each employment sector
- In each of two levels of development
- In each geographic region

# Encountering sexual harassment at work or school by discipline

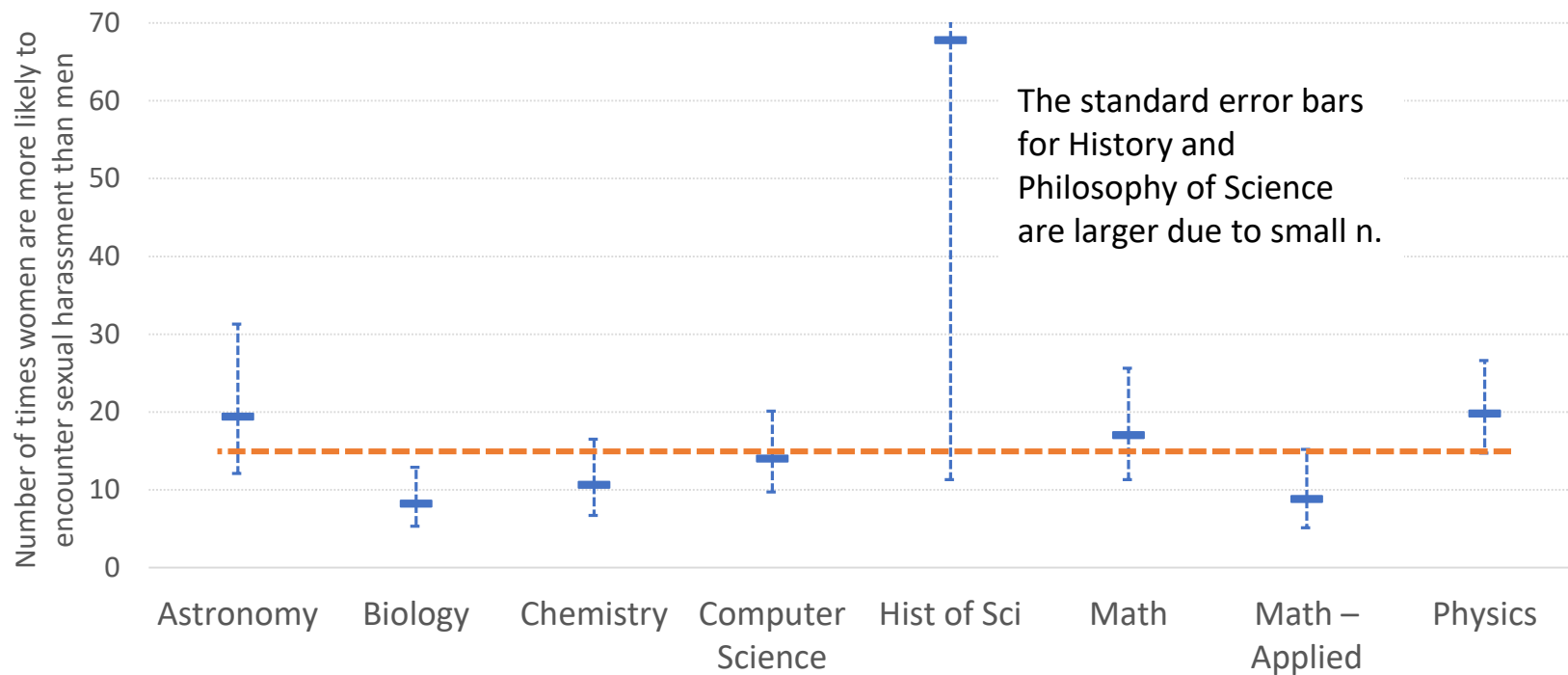




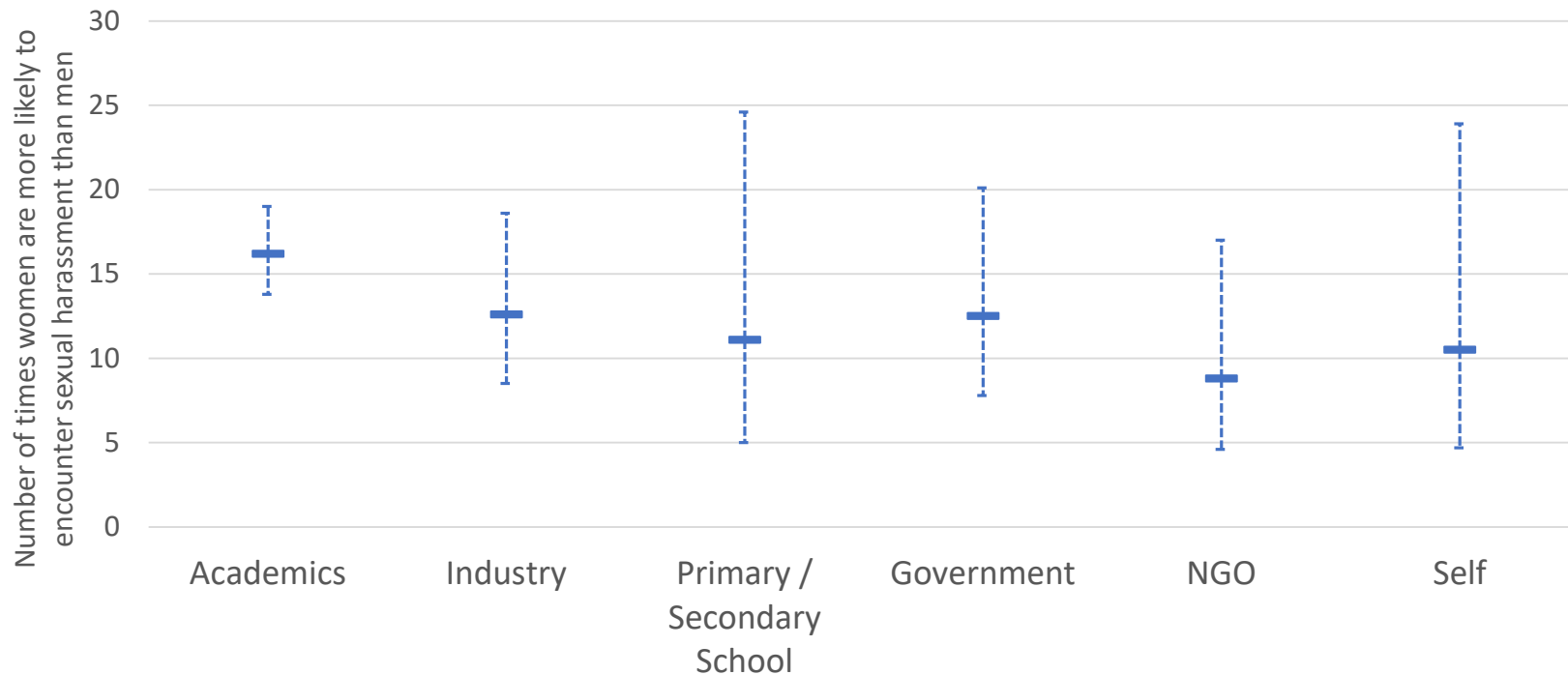
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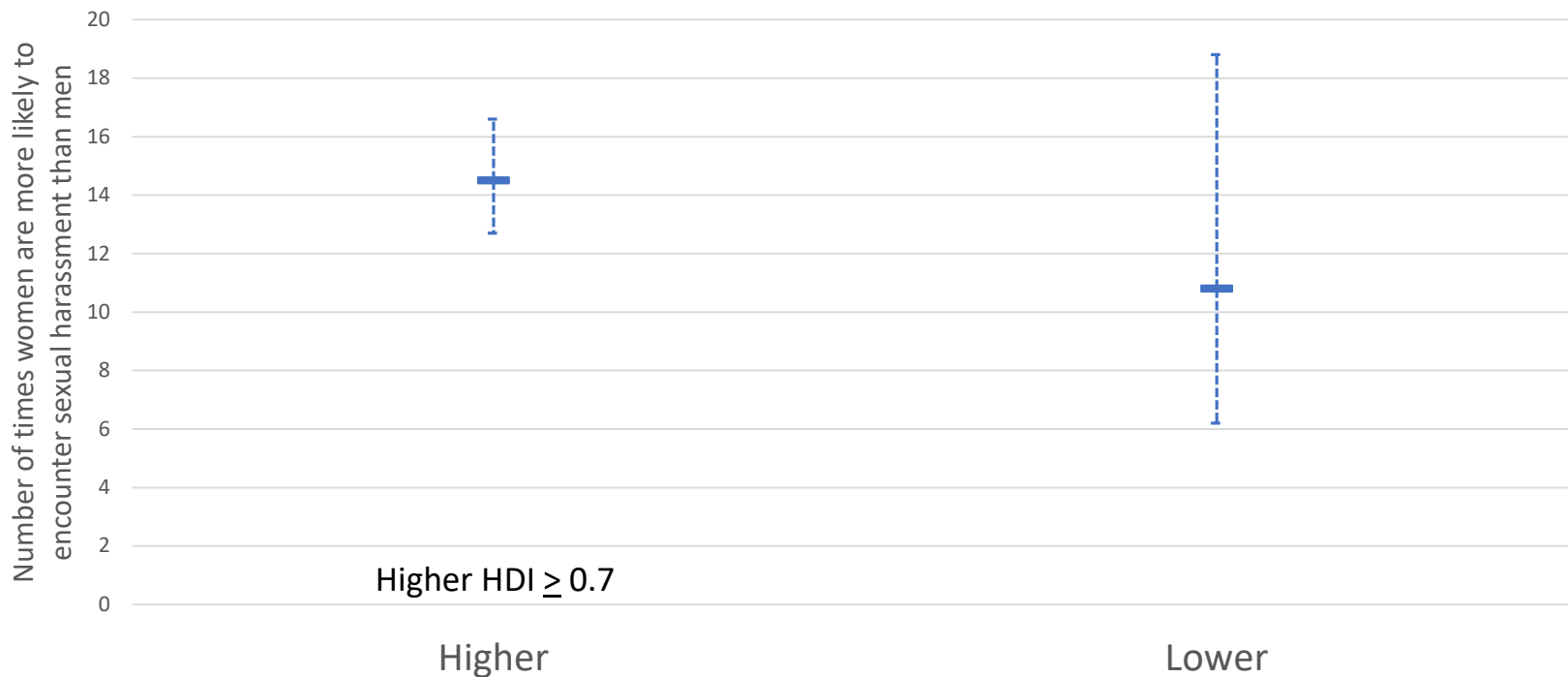
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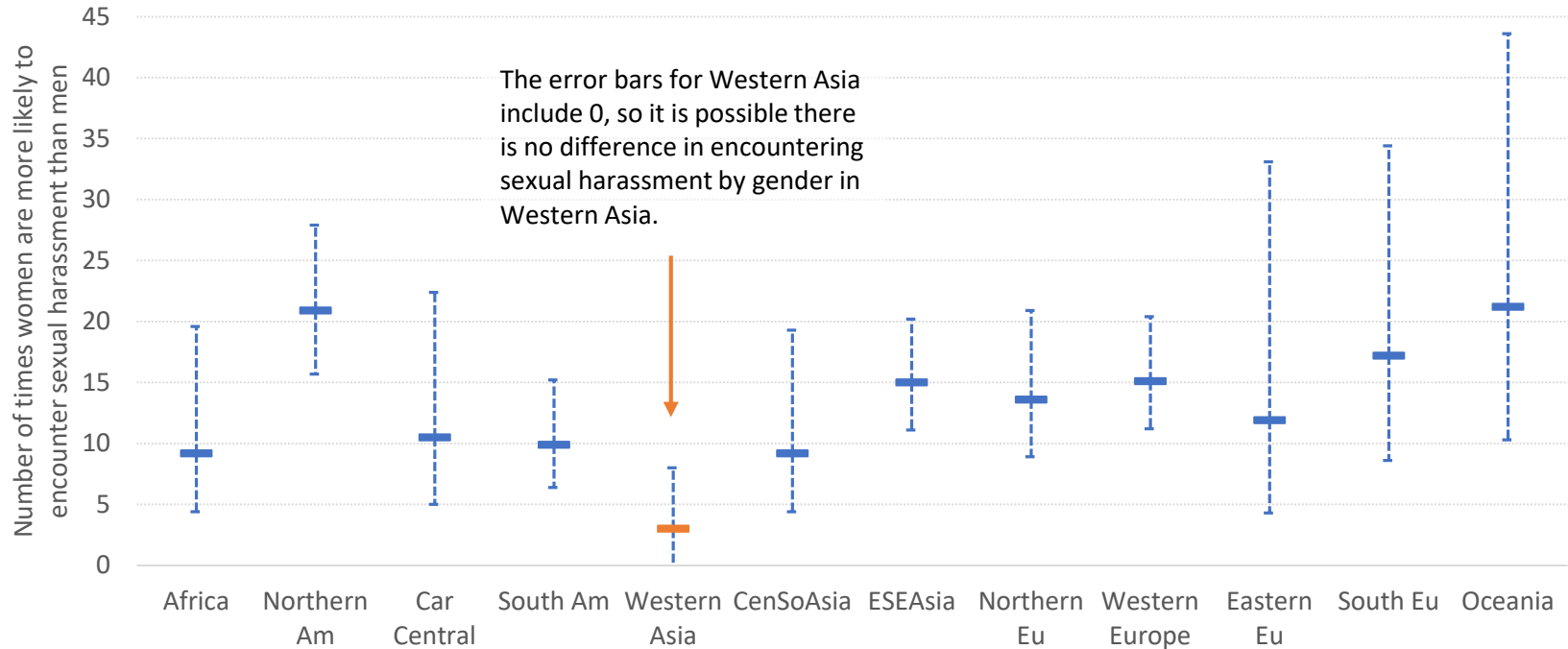
# Encountering sexual harassment at work or school by employment sector



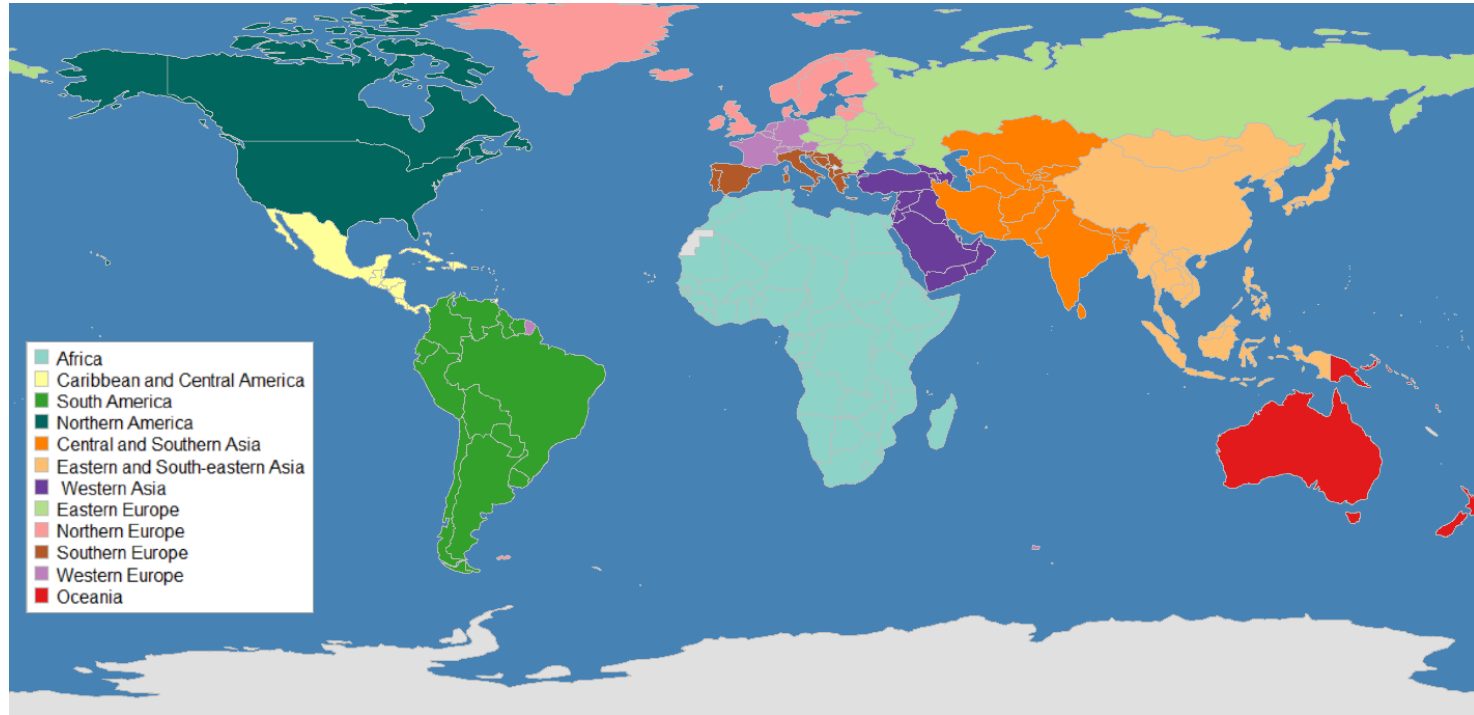
# Encountering sexual harassment at work or school by level of development



# Encountering sexual harassment at work or school by geographic region



# How is Western Asia delineated?



# Are there any exceptions?

- We found strong evidence to indicate that the **gender gap persists**
  - **across all disciplines.**
  - **across all employment sectors.**
  - **across all geographic regions.**
  - **across all levels of development.**

# Thank you...

- Marie-Françoise Roy and Mei-Hung Chiu for your thoughtful leadership of this project
- John Tyler from AIP and Laura Merner (formerly at AIP) for your work on Task 1
- Mark Cesa and The National Academies for coordinating this event
- Questionnaire: <https://statisticalresearchcenter.aip.org/global18>
- List of questions in English: <http://bit.ly/GSSQuestionList>
- Susan White: [swhite@aip.org](mailto:swhite@aip.org)
- Rachel Ivie: [rivie@aip.org](mailto:rivie@aip.org)