



研究者

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Zukunft**

VDI

Business Advantage of Women Engineers

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- **Introduction**
- **Situation in Japan and Germany**
- **Hypotheses**
- **Measures**

Introduction

1982: Diploma in Mechanical Engineering, Technical University Berlin

1987: PhD in Production Technology, Technical University Berlin

1982 – 1990: Researcher at Fraunhofer Institute, Berlin

1990 - 2013: Professor Mechanical Engineering, Berlin University of Applied Sciences (BHT)

1998: Guest Professor at Keimyung University, Daegu, South-Korea

2003 – 2012: Vice President BHT

2013 – 2019: President of University of Applied Sciences, Brandenburg

2019 – 2023: Student in Area Studies (Japan) at Humboldt University Berlin

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Introduction

Chair of Network
Women in Engineering
(11.000 women
engineers)
within the Association of
Engineers (VDI; 130.000
members)

3 adult children



Situation in Japan and Germany



Education

1. OECD PISA Mathematics scores (♂ boys; ♀ girls)



2. Share of women among all tertiary graduates in Science, Technology, Engineering and Mathematics (STEM)

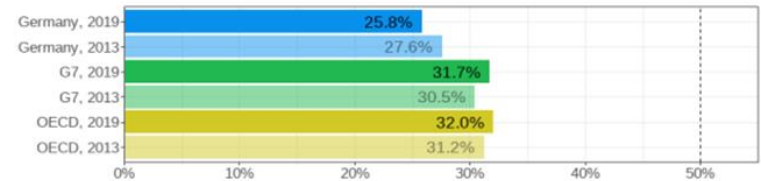


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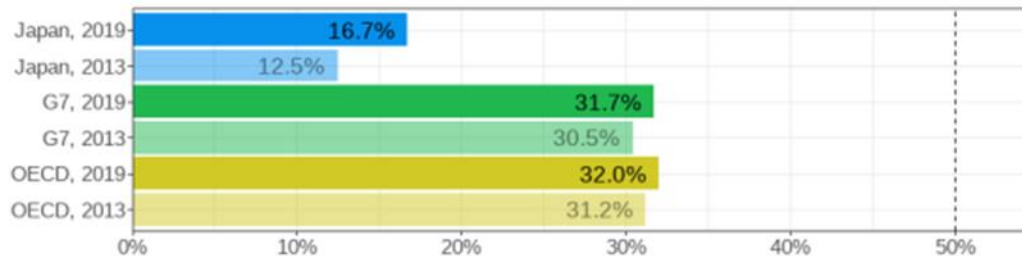


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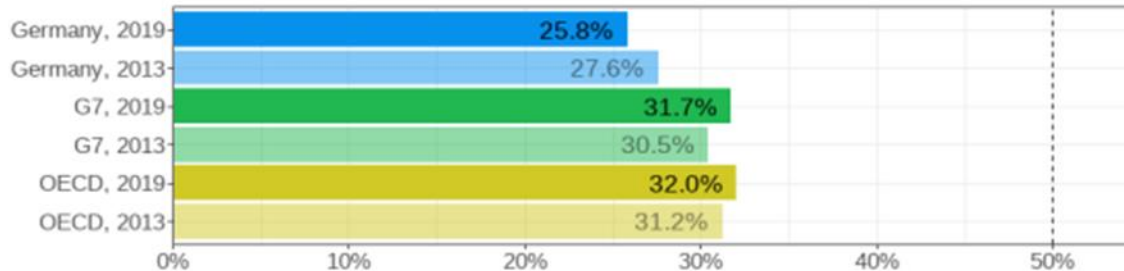
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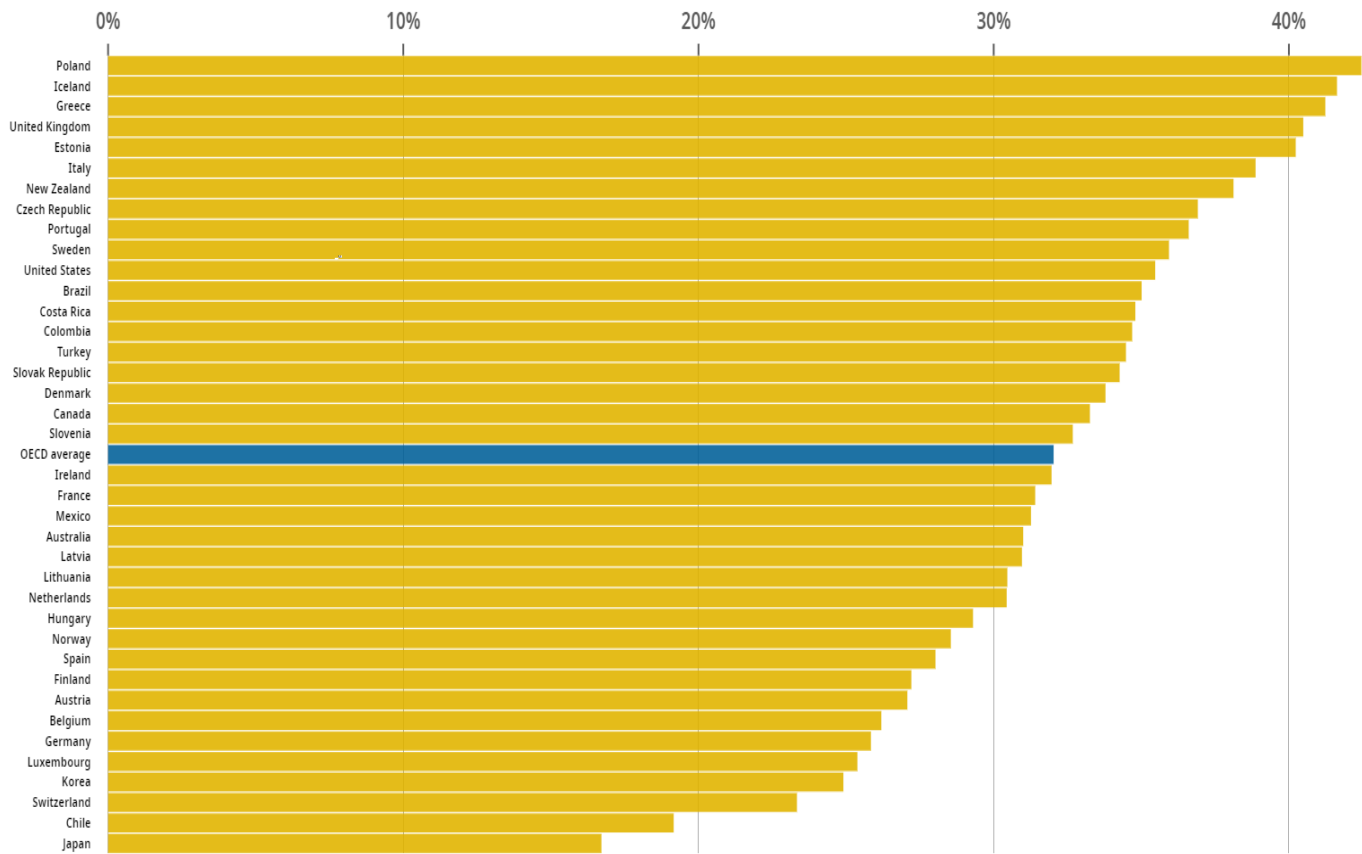
Germany

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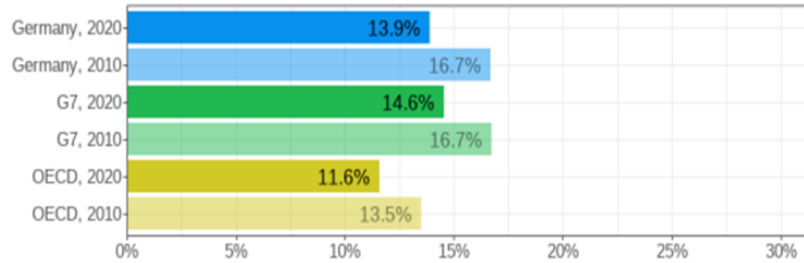
Share of women graduates in STEM fields

% of tertiary graduates in science, technology, engineering and mathematics, 2019

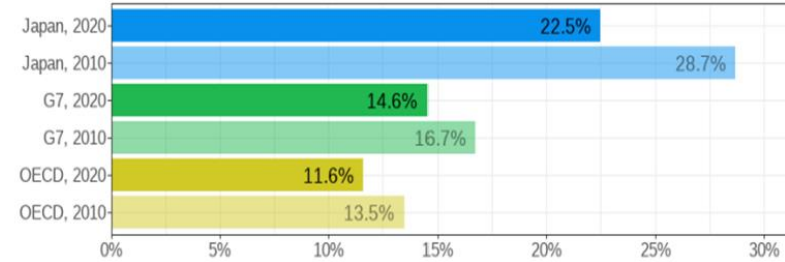


Source: OECD (2021), Education at a Glance 2021 : OECD Indicators

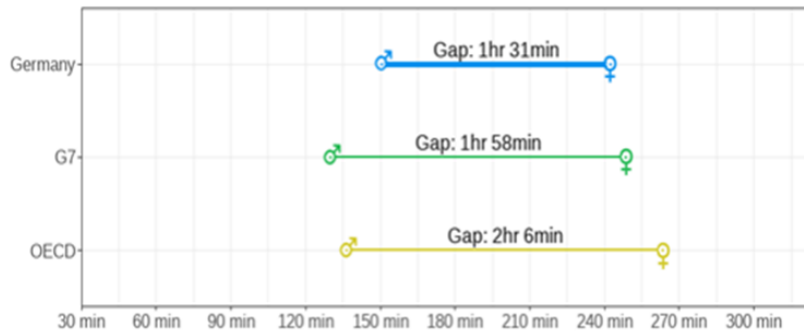
4. Gender wage gap (difference men - women, relative to men)



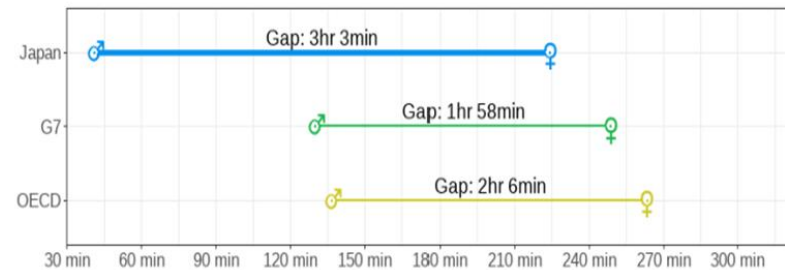
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5. Gender gap in unpaid care and housework in minutes per day (♂ men; ♀ women)



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Hypotheses (Japan and Germany)

Women are not seen as fit as men in STEM subjects (Bias).

Low self-confidence of girls.

Missing female role models.

Industrial tradition is based on the narrative of male inventors.

The topic of “women in engineering” is almost always linked with the topic of “women in leadership”.

Male engineers have a relatively high image in society and earn well.

Childcare is seen as mothers’ responsibility.

Measures

Start early with girls-only STEM education and motivation in media, schools, universities, and communities and industry (e.g. summer camps).

Raise awareness within the families and peer groups. Information for parents should be provided.

Raise young girls' self-efficacy, self-concept and intrinsic as well as extrinsic motivation.

Have more female math and science teachers as role models for young girls, already in elementary school.

Use the media channels that the young girls intensely use to spread information.

Install women only engineering study programs with new course designs.

Measures

Encourage women engineers to talk about their jobs and to function as **role models for men and women.**

Raise awareness of the **importance of diversity in the workplace:** Employers can take a leadership role in promoting diversity in the workplace, emphasizing the value of different perspectives.

Provide **mentorship** and networking opportunities.

Encourage men to be allies.

Change the mindset in society.

輝く女性の活躍を加速する男性リーダーの会

行動宣言



"In order to accelerate the active participation of women, we will take action and send messages ourselves, break through the status quo, and promote networking!"

think
ING.



VDI

What can WE do?

