GENDER SCAN 2021 survey
United States – Annex – Students report

Methodology of the Gender Scan TM 2021 survey :

The Gender Scan TM 2021 survey was conducted online (in 117 countries) from March to August 2021 on a declarative basis with 30,001 male and female respondents worldwide.

The total number of respondents for the United States is of 243 people among which 231 women, 5 men and 7 others, which provides for a 6,3% margin of error.

The total number of students in the STEM fields is of 200, among which 4 men and 196 women.

The total number of students in the digital fields is of 36, among which 1 men and 35 women.

The student definition is based on UNESCO's ISCED 2011 and 2013 definitions.

It therefore includes the following ISCED's levels :

students and graduates in higher education from ISCED levels 5 to 8 (i.e : post-baccalaureate short-cycle education, bachelors, masters and doctorate levels)

STEM disciplines include the following specializations:

- Mathematics
- Physics
- Life sciences, biology, chemistry
- Computer science, digital (courses under ISCED 2013 category 6, which includes programming, programming, network creation and administration, software and application development), software and application development).
- Engineers, processing and production industry
- Environment, sustainable development, ecology
- Building, civil engineering, construction
- Agriculture, agronomy, forestry, veterinarians

GS 2021 survey – Western Europe - Students report annex – table of

|	
Influencing factors	3
Discouraging factors	4
Motivation factors	5
Dissatisfaction	6
Sexism	7

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Influencing factors – STEM vs Digital 🎓

A higher % of women in digital mentioned passion, video games, role models; a higher % of women in STEM mentioned personal interest and research, family/friends and university fairs

What influenced you the most in your choice of training?
Comparison in % of answers from women by specialization
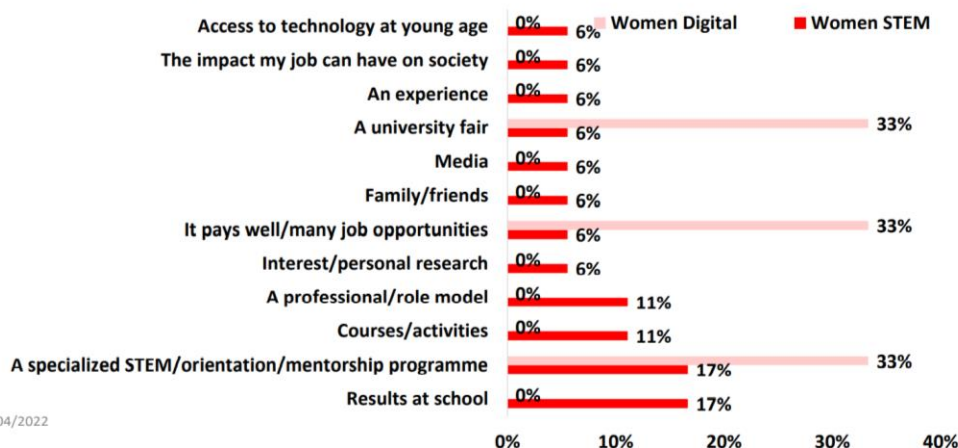
Results of the analysis of answers from 18 women in STEM and 3 women in digital.

- <u>A specialized STEM/orientation/mentorship program</u>(3/17 women in STEM and 1/3 women in digital)

"Extracurricular camps related to science and engineering (i.e.: hands on science, invention convention, odyssey of the mind, local science museum, and zoo)." Woman, 23, Business, economy, finance, accounting and law, Engineering, transformation and production industry

"Extra Curricular Mentors." Woman, 18, Engineering, transformation and production industry

"FIRST Robotics Programs" Woman, 22, Business, economy, finance, accounting and law, Computer sciences, digital

- <u>Results at school</u> (3/17 women in STEM, 0/3 women in digital)

"Being good at math and being recognized for it." Woman, 25, Engineering, transformation and production industry

"better grades in math and physics." Woman, 38, Engineering, transformation and production industry

- <u>A professional/role model</u> (2/17 women in STEM)

"Interviewing a female engineer in high school" Woman, 24, Engineering, transformation and production industry

- <u>Courses/activities</u> (2/17 women in STEM)

"summer research program" Woman, 29, Natural sciences, biology, chemistry

"Girls Scout" Woman, 32, Engineering, transformation and production industry/ Environment, sustainable development, ecology

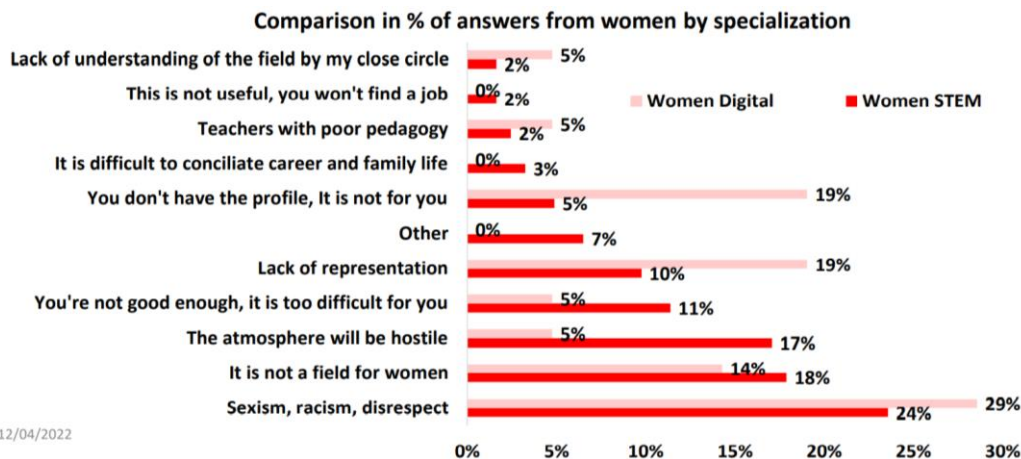- <u>University fair</u> (1/17 women in STEM, 1/3 women in digital

"High School Careers Class" Woman, 20, Mathematics, Computer sciences, digital

'College visits" Woman, 32, Engineering, transformation and production industry

Discouraging factors – STEM vs Digital

A higher % of women in digital have heard that the field is not for women and that it is not useful to find work; conversely more women in STEM have heard it is too difficult for them

Can you indicate the arguments evoked to discourage you from pursuing these professions and these courses?

Comparison in % of answers from women by specialization

Argument	Women Digital	Women STEM
Lack of understanding of the field by my close circle	5%	2%
This is not useful, you won't find a job	2%	0%
Teachers with poor pedagogy	5%	2%
It is difficult to conciliate career and family life	3%	0%
You don't have the profile, It is not for you	19%	5%
Other	7%	0%
Lack of representation	19%	10%
You're not good enough, it is too difficult for you	11%	5%
The atmosphere will be hostile	17%	5%
It is not a field for women	14%	18%
Sexism, racism, disrespect	29%	24%

12/04/2022

Results of the analysis of answers from 123 women in STEM and 21 women in digital.

- <u>Sexism/ racism/ disrespect </u>(29% of women in digital, 24% of women in STEM)
"A professor gave me horrible feedback that was pretty sexist and racist. I also have had several internships with racist/sexist coworkers and conflicts with them." Woman, 26, Computer sciences, digital
 "I was one of the only girls involved in engineering offers at my school, before and after hours, and I would often get called names, tools taken away from me, and would get discluded since my peers and some mentors thought I couldn't succeed at building." Woman, 18, Engineering, transformation and production industry
"Dealing with sexism in STEM related classes made me really worried about going into STEM since it's very frustrating to deal with on a daily basis. While I felt discouraged, I realized that engineering was right for me and my goals, so I went into engineering despite my worries." Woman,19, Engineering, transformation and production industry

- <u>It is not a field for women</u>(14% of women in digital, 18% of women in STEM)
"Many teachers in my high school discouraged me from studying STEM. Despite my high GPA and excellence in STEM related fields, I had teachers discourage me from majoring in Engineering based on my bubbly and fun personality. I also encountered people who would discourage me from going into STEM who would say things like, "Oh, well your husband wouldn't want you to be smarter or make more money than him." "Women should not go into the STEM field." "Guys won't want to date you if you're a nerd." Just to name a few." Woman, 24, Mathematics, Engineering, transformation and production industry
"People saying girls shouldn't be engineers." Woman, 19, Computer Sciences, digital, Physics/Engineering, transformation and production industry

- <u>The atmosphere will be hostile </u>(17% of women in STEM, 5% of women in digital)
"Inequity of job opportunities available for women compared to men and peer pressure." Woman, 25, student in Natural sciences, biology, chemistry/Engineering, transformation and

production industry

"Stereotypes about working in engineering as a woman, academic struggles I'd seen my friends go through, attitudes of other engineering students." Woman, 21, Computer sciences, digital/ Engineering, transformation and production industry/ Environment, sustainable development, ecology

"Though not explicitly stated very often, there is an undercurrent of oppression towards women in STEM - nobody actually says it, but during classes or other STEM-related activity, I often get the impression that I am not welcome. Every time a man interrupts me in class, every time a male classmate informs me that I was incorrect, every time a man turns the conversation to a subject demeaning to women as a whole, this impression is reinforced and strengthened, as if to say 'this is how things are, you do not belong here' toward me and other women like me. Every time I interrupt a man, every time I shout out the correct answer and receive unenthusiastic affirmation in response, every time I try to leave a conversation that demeans my gender, this impression is actively working against me, retaliating against my refusal to submit to the institutionalized gender bias, as if to say 'how dare you try to change the way things are' toward me who dared to step out of line." Woman, 18, Engineering, transformation and production industry

- <u>You're not good enough, it will be too difficult for you</u> (11% of women in STEM, 5% of women in digital)

"People doubting my abilities/potential because of my inclination towards athletics and lack of experience doing personal stem projects in high school. Was perceived as "book smart" and not "engineering material" Woman, 18, Engineering, transformation and production industry

"Several high school teachers told me I shouldn't study STEM since I wasn't the strongest math student, recommended I study writing instead." Woman, 25, Engineering, transformation and production industry, environment, sustainable development, ecology

"I got convinced I couldn't do math after getting a B+" Woman, 20, Engineering, transformation and production industry

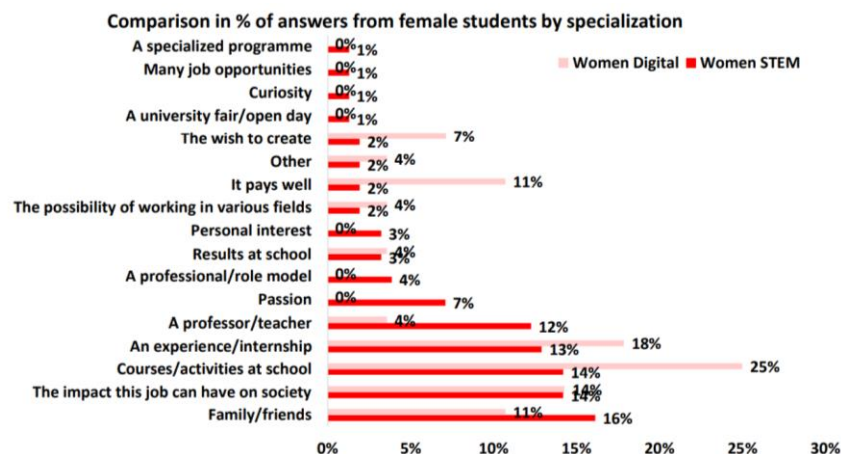- <u>Lack of representation</u> (10% of women in STEM, 19% of women in digital)

"Being a girl in the tech field is very intimidating since it is a male-dominated field. Sometimes(many times) male classmates underestimate you or don't value what you bring to the table. A lot of the time, they make you feel really bad about not knowing something. Overall, it's very discouraging being the one or two girls in a major-related class. It really makes me feel like I have no allies and am on my own." Woman, 18, Computer science, digital fields

"Feeling like I didn't belong in my male-dominated college courses and not seeing female professors. Lack of people like me. " Woman, 21, Civil engineering, construction industry

Motivation factors – STEM vs Digital

A higher % of women in STEM evoke the impact on society and a university fair; a higher % of women in digital mention passion for the field, results at school and the wish to create

Can you specify what triggered your current choice of professional orientation?

Comparison in % of answers from female students by specialization

(Women Digital, Women STEM)

Factor	Women STEM	Women Digital
A specialized programme	0%	1%
Many job opportunities	0%	1%
Curiosity	0%	1%
A university fair/open day	0%	1%
The wish to create	2%	7%
Other	2%	4%
It pays well	2%	11%
The possibility of working in various fields	2%	4%
Personal interest	0%	3%
Results at school	3%	4%
A professional/role model	0%	4%
Passion	0%	7%
A professor/teacher	4%	12%
An experience/internship	13%	18%
Courses/activities at school	14%	25%
The impact this job can have on society	14%	14%
Family/friends	16%	11%

12/04/2022   5

Results of the analysis of answers from 155 women in STEM and 28 women in digital.

Courses/ activities at school (14% of women in STEM, 25% of women in digital)

"Future City Engineering Competition for middle school students (participated for 2 years)." Woman, 21, Engineering, transformation and production industry

"Seeing an integrated circuit chip wafer at a science fair in high school, taking a physics class." Woman, 19, Computer sciences, digital/Engineering, transformation and production industry

"Programming a makey makey to turn a banana into a piano in 5th grade" Woman, 20, Computer sciences, digital

"My high school chemistry and physics classes inspired me to go into into engineering since I wanted to apply the information that I loved learning to the real world." Woman, 19, Engineering, transformation and production industry

An experience/ internship (13% of women in STEM, 18% of women in digital)

"Summer camps and internships + parental support and inspiration" Woman, 19, Computer sciences, digital

"I went to a NASA museum in Texas and saw all the amazing things that engineers can do." Woman, 21, Computer sciences, digital/Engineering, transformation and production industry/ Environment, sustainable development, ecology/Health and social protection

"In high school, I had an internship at a college where I was introduced to scanning electron microscopy, and I have been in love with microscopy and materials science ever since." Woman, 26, Engineering, transformation and production industry

"An internship in the industry" Woman, 19, Arts, humanities and Languages/Construction industry, civil engineering

The impact this job can have society (14% women in STEM, 14% of women in digital)

"BP Oil spill occurred during Year 11 of high school. Was taking environmental science at the time, and we thoroughly covered the event, and specifically different solutions that could mitigate the impact. I wanted to be a part of creating future solutions to preserve the environment and stop these events from occurring." Woman, 25, Engineering, transformation and production industry/ Environment, sustainable development, ecology

"I love the logic of math, CS and biology and how they can be used to help people live happier, healthier lives." Woman, 18, Mathematics/ Natural sciences, biology, chemistry/Computer sciences, digital

"mainly being able to use this knowledge to advance other parts of our society, especially relating to policy" Woman, 21, Natural sciences, biology, chemistry/Engineering, transformation and production industry

Family/Friends (16% Women in STEM, 11% Women in digital)

"A family member always used to tell me about the wide variety of opportunities in the tech field which really intrigued me. I was really drawn to the idea that I could pursue so many different things in the tech field. It's basically like you can't go wrong. I'm also from silicon valley and tech is really valued here. I grew up on tech and my geographical location has taught me to value it so much growing up. " Woman, 19, Computer Science
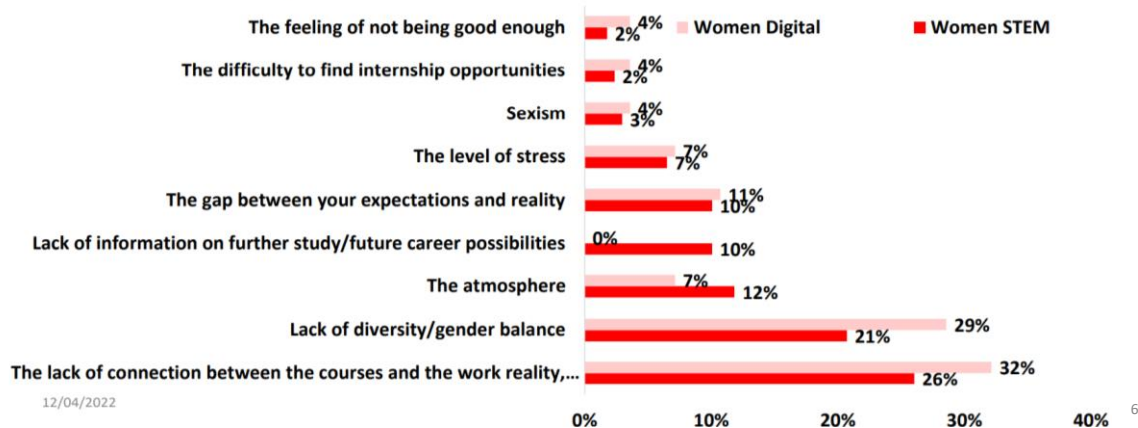
"It was something I enjoyed and my grandfather, who is also an engineer, helped cultivate that interest from a young age" Woman, 24, Engineering, transformation and production industry

Dissatisfaction factors – STEM vs Digital 🎓

A higher % of women in STEM are dissatisfied with the gap between expectations and studies; a higher % of women in digital with the level of stress, gender balance and atmosphere

What are the most important problems you face today in your studies?

Comparison in % of answers from digital students by gender

	Women STEM	Women Digital
The feeling of not being good enough	2%	4%
The difficulty to find internship opportunities	2%	4%
Sexism	3%	4%
The level of stress	7%	7%
The gap between your expectations and reality	10%	11%
Lack of information on further study/future career possibilities	10%	0%
The atmosphere	12%	7%
Lack of diversity/gender balance	21%	29%
The lack of connection between the courses and the work reality,…	26%	32%

12/04/2022

Results of the analysis of answers from 912 women in STEM and 317 women in digital.

- <u>The lack of connection between the courses and the work reality, lack of opportunities to practice (</u>26% of women in STEM, 32% of women in digital)

"I wish what we learned was less theoretical and more tailored to the industry. College sometimes doesn't feel necessary for the kinds of work I do, not because college in general is bad but because college can't teach you the practical skills of being an engineer." Woman, 19, Computer sciences, digital

"I would like to see more real world application. I think it would be more useful to spend a whole semester as an intern for a company instead of taking technical classes." Woman, 20, Engineering, transformation and production industry

"More information about how the concepts we learn in class relate to working in a real job. We learn a lot of interesting things, but I wonder how much of it will be used on a daily basis in my career." Woman, 21, Construction industry, civil engineering

- <u>The lack of diversity, gender balance </u>(21% of women in STEM, 29% of women in digital)

« Less white/cis/hetero/men bias» Woman, 20, Engineering, transformation and production industry

"Less gender disparity. More outreach to young girls. More accountability for men." Woman, 20, Computer sciences, digital

« My field is VERY heavily male dominated - sometimes I can be the only woman in a room full of 30 people. Women are very heavily discouraged from being themselves, and often have to conform to the "ideal male employee/student" stereotype to have any measure of success. The same thing goes for being queer (I am bisexual). I am not out to the majority of my peers, and the ones I am out to discredit my sexuality and the majority of the LGBT community. There is very little diversity, and even when there is, any minority is told to adhere to the "standard" at the expense of their personality and personal beliefs." Woman, 23, Engineering, transformation and production industry

- <u>The gap between expectations and current studies </u>(10% of women in STEM, 11% of women in digital)

"More equitable access to resources. Only the women who are employed by the university typically have access to Grace hopper and other resources from the university." Woman, 20,

Computer sciences, digital
« More emphasis on growth and learning, less on memorization and comparisons against other students » Woman, 21, Computer sciences, digital/Engineering, transformation and production industry/Environment, sustainable development, ecology
« I think that there needs to be more consistency between courses. » Woman, 21, Engineering, transformation and production industry

- The atmosphere (12% of women in STEM, 7% of women in digital)
"In my degree plan, there's always competition, especially between females. Every woman feels like she has something she needs to prove, and oftentimes this comes out in a competitive nature. Right now, there is no reason to be pitting ourselves against each other, and I would really like to see women supporting women and building one another up. Rather than leaving each other behind, we should be helping each other when we struggle." Woman, 19, Engineering, transformation and production industry
"My advisor, and many other graduate student advisors in my department, are horrible mentors. I would like to see graduate students and assistant professors taught how to be good, effective mentors who care about their students well-being in addition to their research output." Woman, 26, Engineering, transformation and production industry
"lessen graduate students need to feel like they must compete with others to get ahead - more collaboration and healthy relationships between students" Woman, 29, Natural sciences, biology, chemistry

- Lack of information on further study/career possibilities (10% of women in STEM; 0% of women in digital)
"I just wish we got more examples of what we can DO. I'm studying biomedical engineering. What are typical job titles? What does a profession BME do every day? What tracks could my future career potentially go down?" Woman, 20, Engineering, transformation and production industry
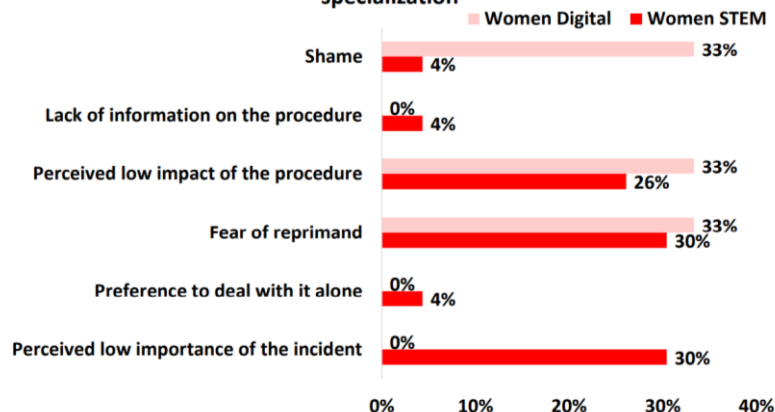"Better understanding the industries that you can go into by taking certain classes" Woman; 21, Engineering, transformation and production industry, civil engineering, construction industry

Sexism – reaction – STEM vs Digital 🎓
A higher proportion of women in digital minimize the importance of the sexist episode and a higher proportion of women in STEM prefer to deal with the issue on their own

Why did you not use your school's alert procedure?
Comparison in % of answers from female students by specialization

Women Digital ▪ Women STEM

- Shame — 4% / 33%
- Lack of information on the procedure — 0% / 4%
- Perceived low impact of the procedure — 26% / 33%
- Fear of reprimand — 30% / 33%
- Preference to deal with it alone — 0% / 4%
- Perceived low importance of the incident — 0% / 30%

12/04/2022

0% 10% 20% 30% 40%

7

Results of the analysis of answers from 23 women in STEM and 3 women in digital.

The most cited responses were:
- Fear of reprimand (11% of women in STEM, 8% of women in digital)
"Did not think the situation needed to be escalated and I know people who have had problems when reported it.", Woman, 27, Engineering, transformation and production industry; Environmental science, sustainable development, ecology
"The impact of the investigation would have made me feel worse. I didn't want to be attacked by the offenders attorney and have to defend myself when I did nothing wrong." Woman, 40, Engineering, processing and production industry

- Perceived low impact of the procedure (33% of women in STEM, 26% of women in digital)
"It doesn't work well. They drag the girls through the mud if they speak up. Schools protect the boys almost always." Woman, 27, Engineering, transformation and production industry
"Didn't want to relive trauma, didn't trust anything good would come from it" Woman, 20, Engineering, transformation and production industry
"Don't feel the systems are effective. Felt like it would have been a waste of time and not worth the effort." Woman, 24, Engineering, transformation and production industry

- Perceived low importance of the incident (28% of women in STEM, 42% of women in digital)
"Didn't think it was severe to report it to authorities. Managed well through friends." Woman, 30, Natural sciences ,biology, chemistry, Engineering, transformation and production industry