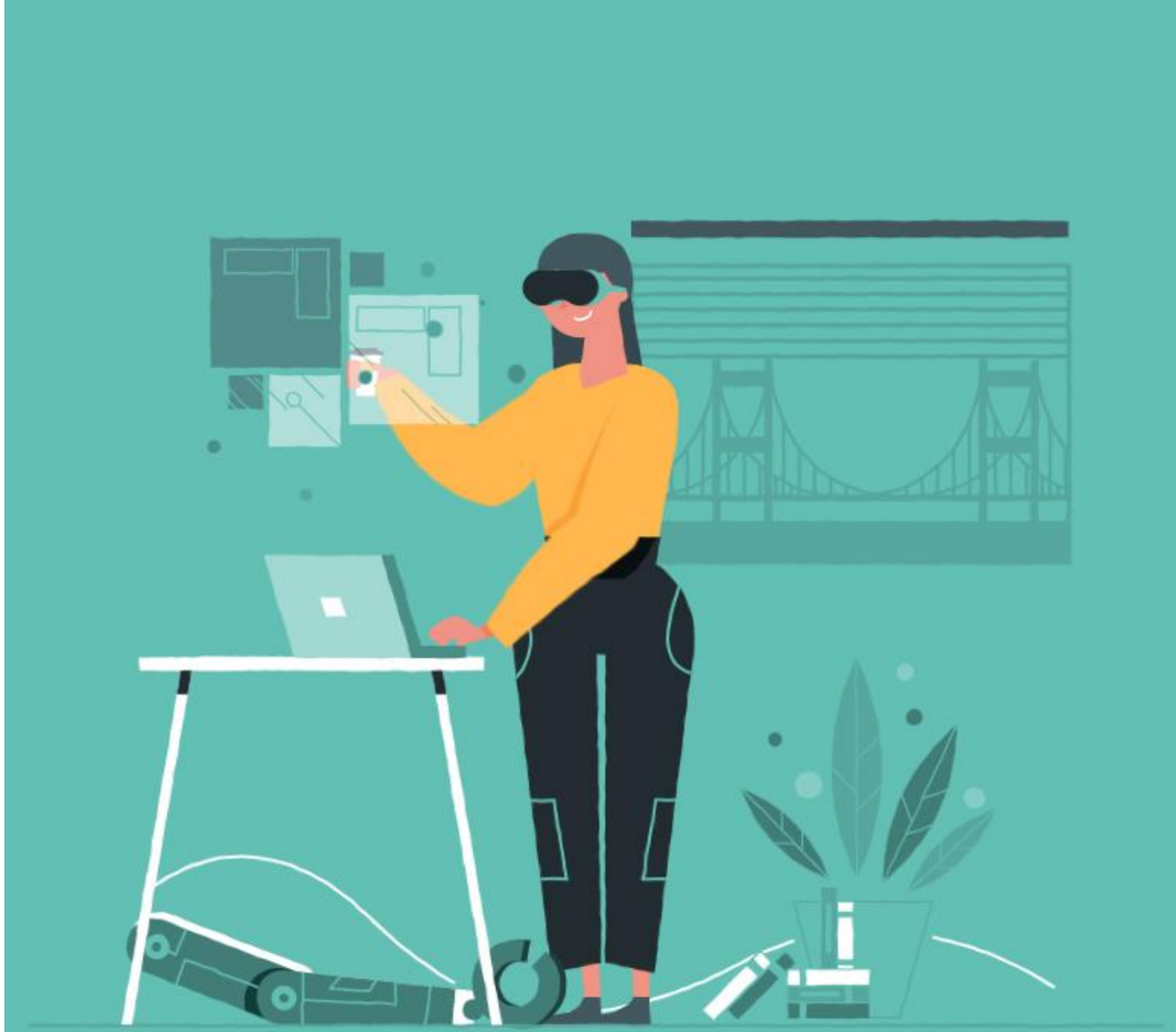
How role models are changing the face of STEM: United Kingdom



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Scope of the research

Who do we mean by ‘role models’? Our research names the following types of people who may have an impact on interest in STEM:

- Fictional: ‘film’ and ‘literature’
- Non-fictional: ‘real-life’
- Women working in STEM: ‘researchers’, ‘computing’, ‘developers’, ‘inventors’.

Given our expectations of teachers and parents varies across cultures we have **excluded them from our definition of ‘role models’ as the results become skewed.** By seeing teachers and parents primarily responsible for driving girls interest in STEM subjects underestimates the impact of other types of role models – something that become evident in the data.

UK summary

Our research demonstrates that UK girls are more interested in STEM subjects when they have a role model.

- The number of UK girls interested in STEM increases when they have role models compared to those who do not (30% of girls without a role model report an interest in STEM subjects, versus 41% with role models). The increase is slightly less than the European findings (almost doubling the number of girls interested in STEM), but still significant.
- The reverse is also true, that having a role model significantly reduces the number of UK girls who say that they are less interested in STEM subjects (43% of girls without a role model are less interested in STEM subjects, versus 28% of girls with a role model).
- More UK girls are interested in STEM in spite of not having a role model than the European average (30% in the UK vs. 26% Europe-wide).
- The difference role models make (11%) on the number of British girls reportedly interested in STEM subjects is the same in France and Italy– below the European average (15%).
- The number (41%) of British girls with a role model reportedly interested in STEM is the same in Germany – on par with the European average (26%).
- The number (28%) of British girls with a role models reportedly not interested in STEM subjects is the same in the Belgium – above the European average (24%).

UK girls who have STEM role models report more passion for all STEM subjects. The rise in interest is not limited to a single subject.

- On average – across Mathematics, Physics, Biology, Chemistry and Computer Science – having a STEM role model results in a further 12% increase in interest for girls in the UK classroom (compared to those who do not have role model, and report themselves as interested in a subject). This increase is on par with the European average and is the same in Belgium and Poland
- Girls with role models in STEM believe in themselves: more of them evaluate themselves as high performers across every STEM subject compared to girls without role models.
- The biggest leap in the number of interested, self-confident girls in the UK classroom when STEM role models are a factor is in Mathematics.

UK girls with STEM role models can imagine a career in STEM more easily than those who don't.

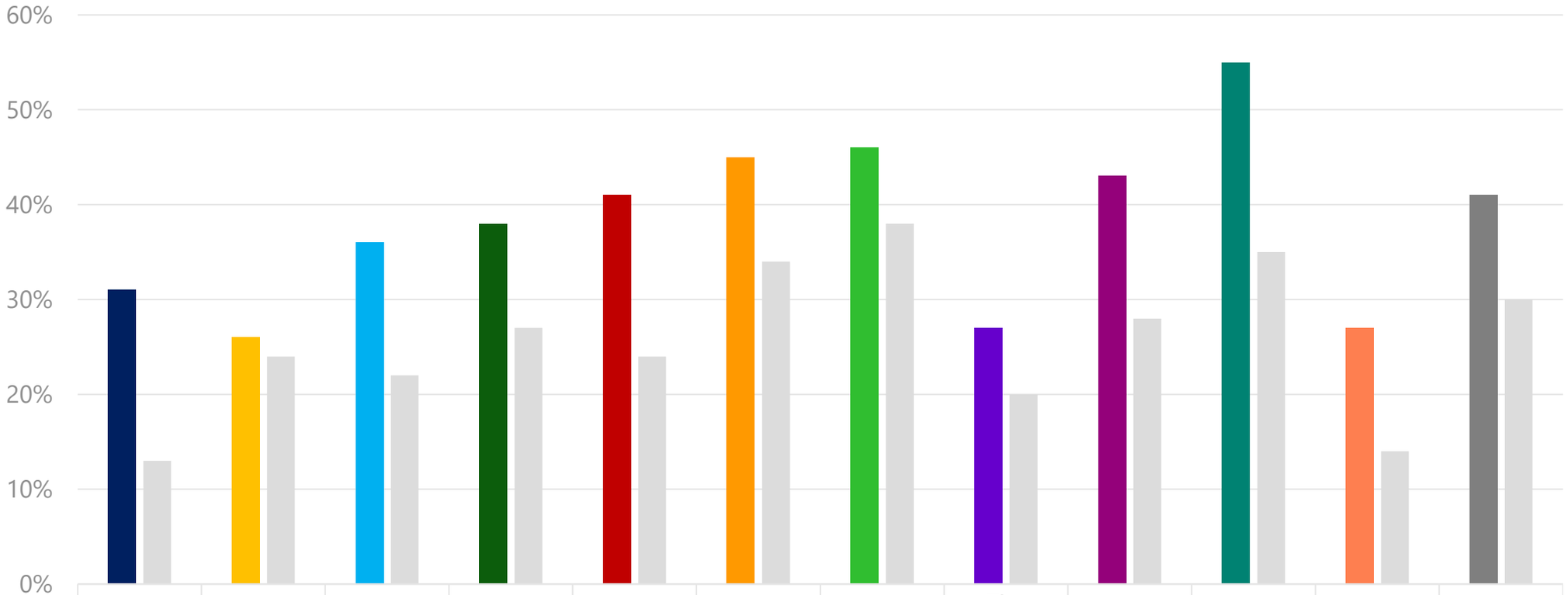
- Over half (52%) of UK girls with role models can imagine a future career in STEM – the same in the Czech Republic.
- 20% more UK girls can imagine a career in STEM if they have a role model compared to those who don't – the same in Ireland.
- However, only around 2:5 (40%) of UK young women with a STEM role model actually work in STEM subjects – the same in Italy – showing an 'opportunity gap' to convert the passion in the classroom into a future STEM workforce.
- It also shows that a role model is not enough to help bridge the digital skills gap, as almost half (48%) of girls who have a STEM role models still do not see themselves working in STEM.
- 'Celebrities' are considered the least influential role models, whereas 'Women Working in STEM' are the top role models for UK girls, whether or not they already have role models. A trend that's shared in Germany and Poland.

Having a role model in STEM makes UK girls want more encouragement, from individuals and from society.

- UK girls who have STEM role models want more encouragement from their family.
- UK girls who have STEM role models are driven by their confidence in equality.
- While UK girls without STEM role models only compare themselves to their male peers in STEM subjects, those with role models don't at all. Rather they look to their peer group for approval, and look to their teachers as mentors.
- Once UK girls have STEM role models they see the value in practical, hands-on experience in driving their interest in STEM. Before they have a role model they give no importance to this kind of experience in getting them interested in STEM subjects.
- The only factors that drive interest in STEM for UK girls without role models are the real-life application of STEM, and how they fare in the STEM classroom compared to their male peers.

Country findings

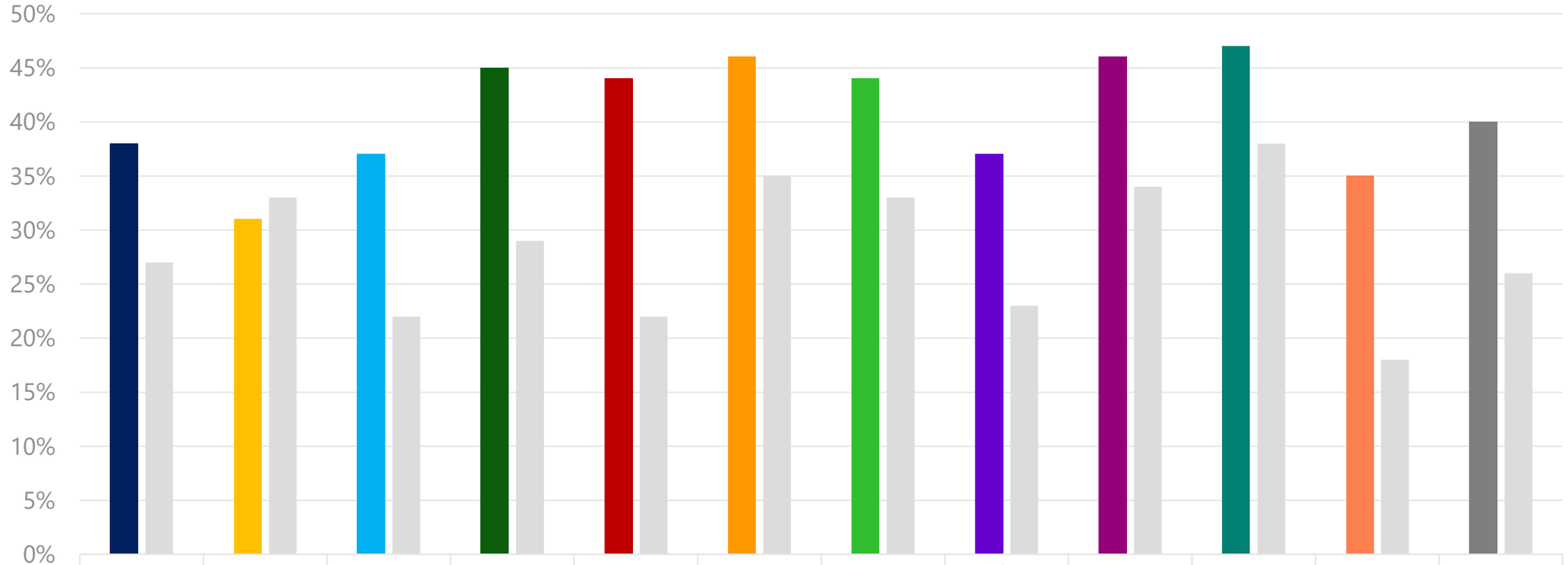
How interesting do you consider STEM subjects to be?



	Belgium	Czech Republic	Finland	France	Germany	Italy	Ireland	The Netherlands	Poland	Russia	Slovakia	UK
Participants w/ role model	31%	26%	36%	38%	41%	45%	46%	27%	43%	55%	27%	41%
Participants w/out role model	13%	24%	22%	27%	24%	34%	38%	20%	28%	35%	14%	30%

Question How interesting do you consider STEM subjects to be?
Base Girls between the age 11 to 30 with/without a role model
Parameter Average Scores for interest in STEM with/without a role model

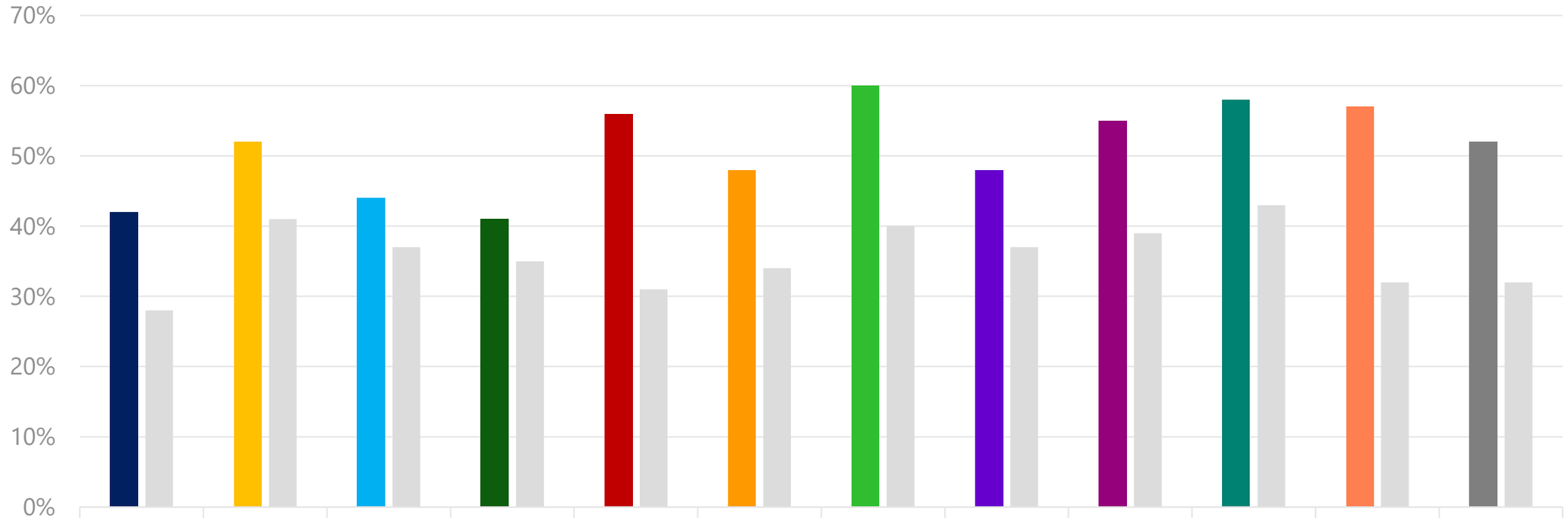
School subjects – personal interest



	Belgium	Czech Republic	Finland	France	Germany	Italy	Ireland	The Netherlands	Poland	Russia	Slovakia	UK
Participants w/ role model	38%	31%	37%	45%	44%	46%	44%	37%	46%	47%	35%	40%
Participants w/out role model	27%	33%	22%	29%	22%	35%	33%	23%	34%	38%	18%	26%

Question Please rate all subjects according to your personal interest in school / when you were at school.
Base Girls between the age 11 to 30 with/without a role model
Parameter Average Scores for interest across STEM subjects with/without a role model

Imagining to work in a STEM discipline

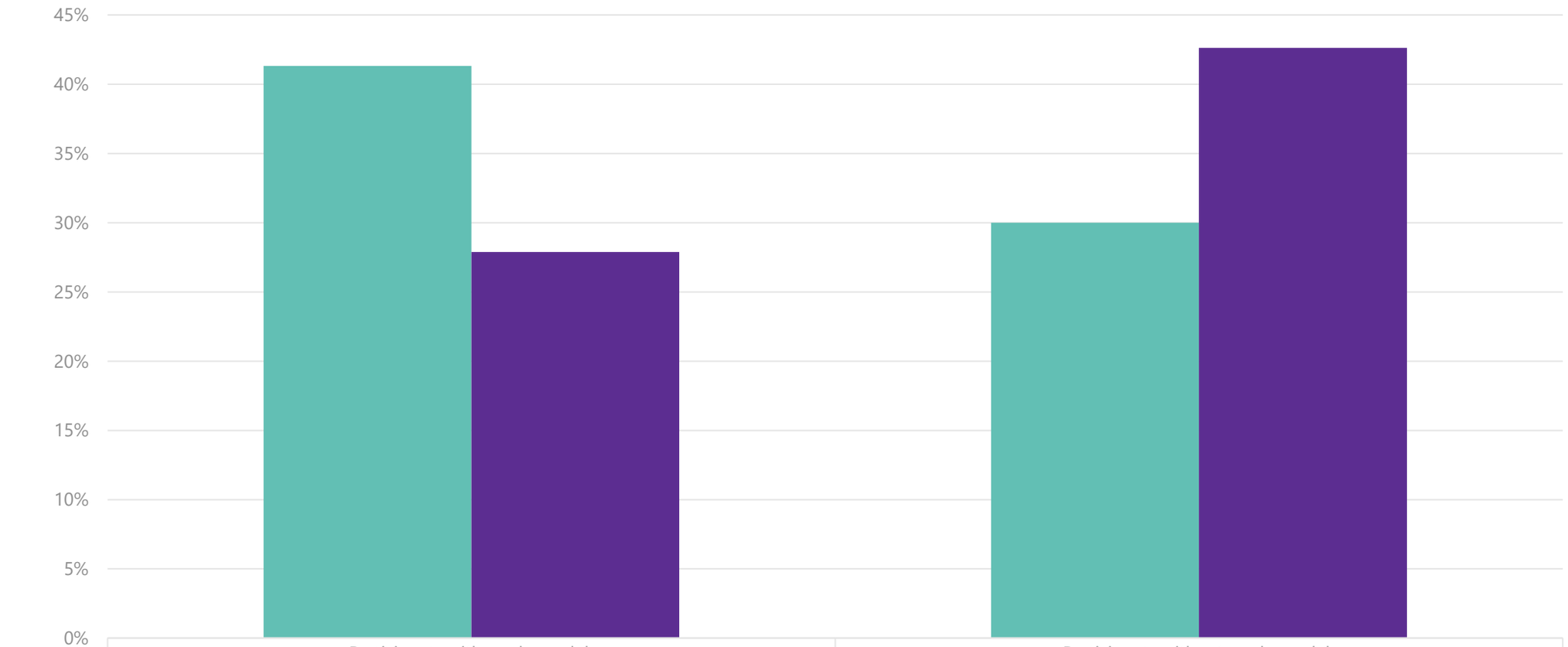


	Belgium	Czech Republic	Finland	France	Germany	Italy	Ireland	The Netherlands	Poland	Russia	Slovakia	UK
Participants w/ role model	42%	52%	44%	41%	56%	48%	60%	48%	55%	58%	57%	52%
Participants w/out role model	28%	41%	37%	35%	31%	34%	40%	37%	39%	43%	32%	32%

Question Can you imagine yourself pursuing a career in one of the STEM disciplines – that is, Science, Technology, Engineering and Mathematics?
Base Girls between the age 11 to 30 with/without a role model
Parameter Average Scores for imagining to work in STEM with/without a role model

UK data

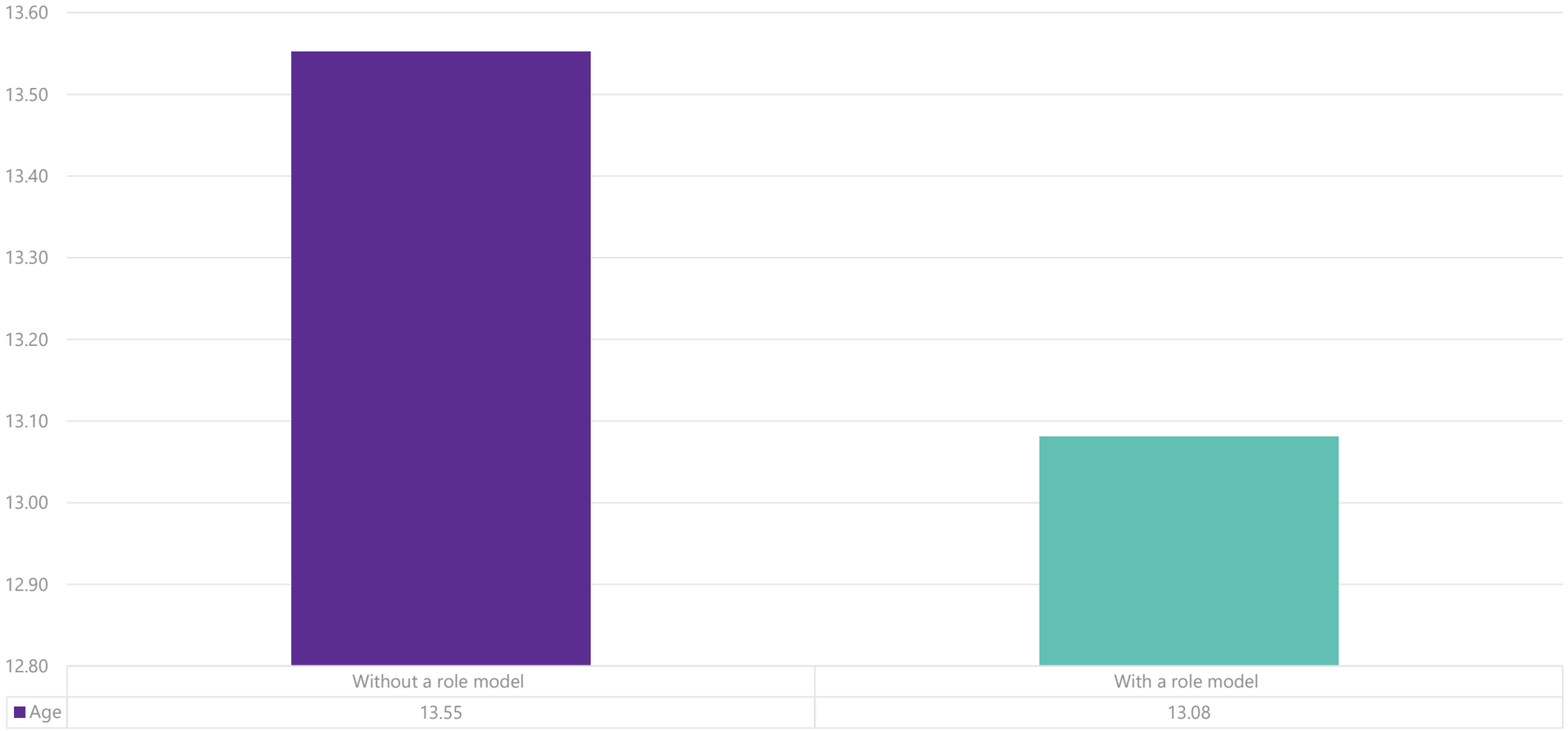
How interesting do you consider STEM subjects to be?



	Participants with a role model	Participants without a role model
Top 2	41%	30%
Bottom 2	28%	43%

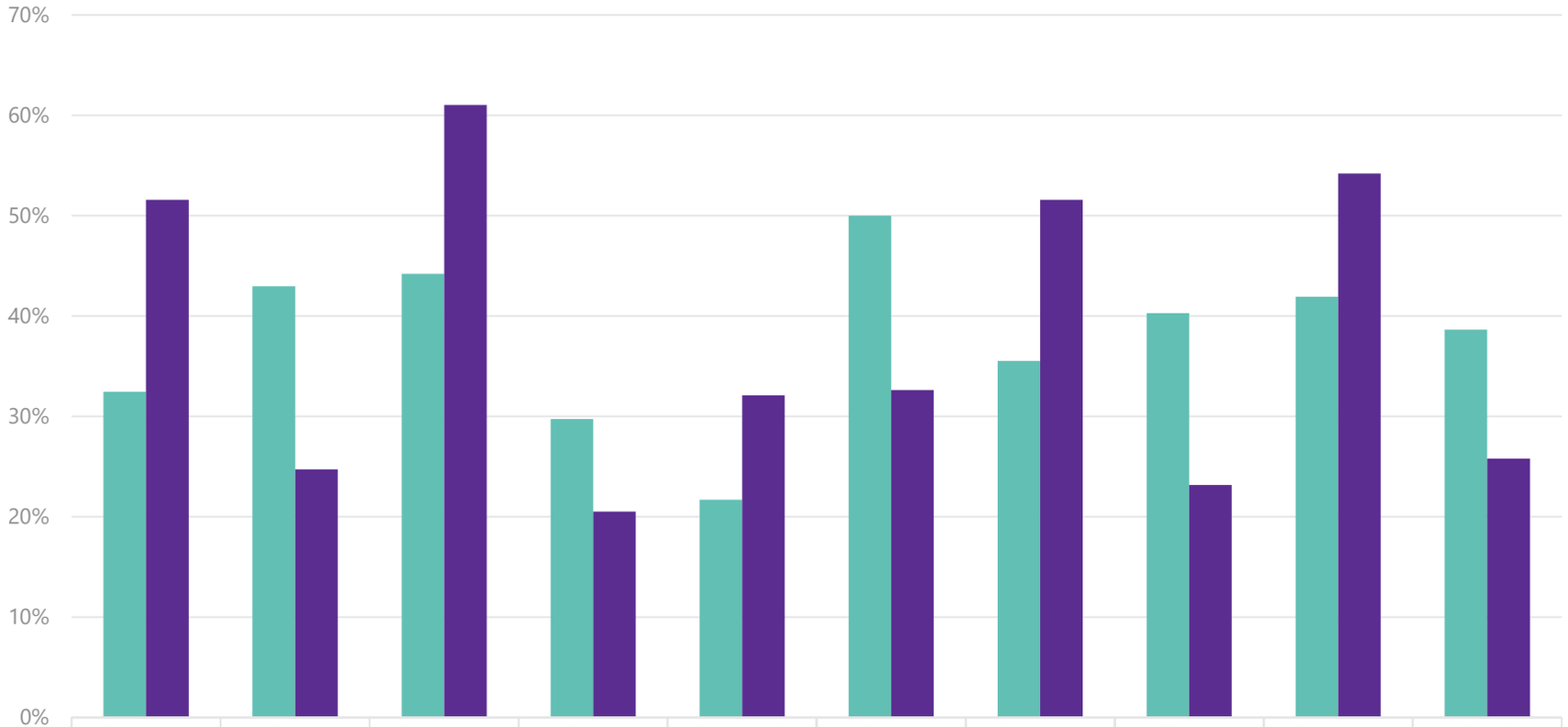
Question How interesting do you consider STEM subjects to be?
Base British participants with and without a role model
Parameter Top 2= "Very interesting" + "Extremely interesting"; Bottom 2= "Not at all interesting" + "Slightly interesting"

At what age did you become interested in STEM?



Question At what age did you become interested in STEM?
Base British respondents with and without a role model

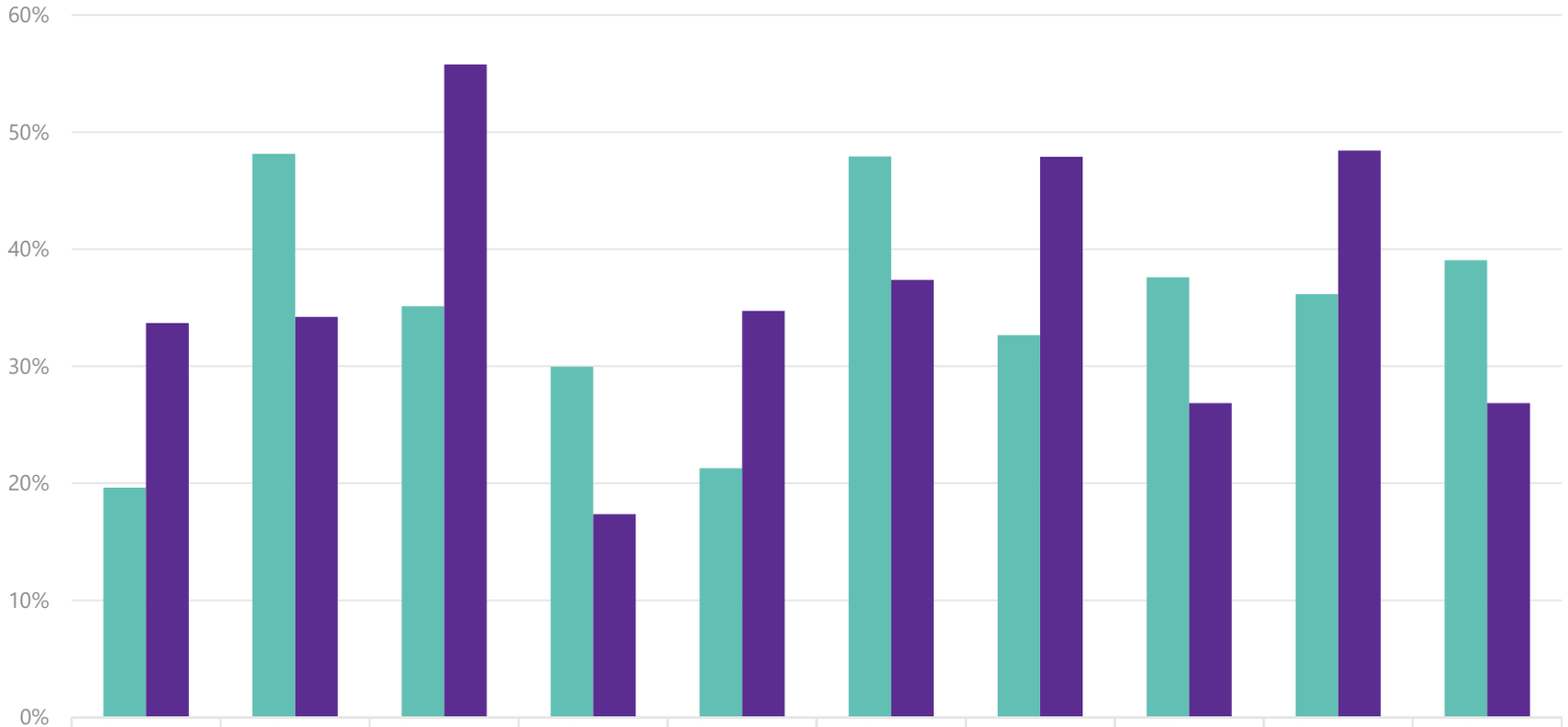
School subjects – personal interest



	Mathematics		Physics		Biology		Chemistry		Computer Science	
	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2
Participants with a role model	32%	43%	44%	30%	22%	50%	36%	40%	42%	39%
Participants without a role model	52%	25%	61%	21%	32%	33%	52%	23%	54%	26%

Question Please rate all subjects according to your personal interest in school / when you were at school.
Base British participants with and without a role model
Parameter Top 2= “Very interesting” + “Extremely interesting”; Bottom 2= “Not at all interesting” + “Slightly interesting”

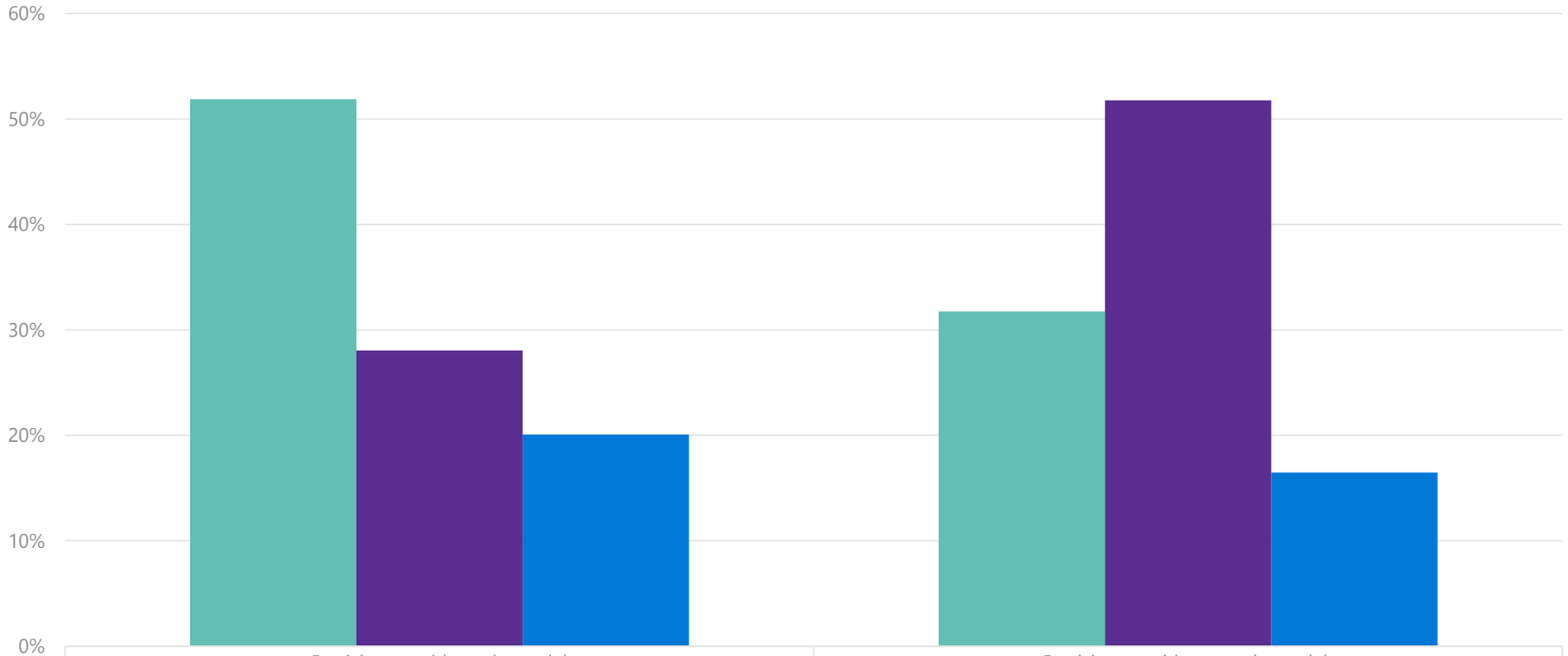
School subjects – self evaluation



	Mathematics		Physics		Biology		Chemistry		Computer Science	
	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2
Participants with a role model	20%	48%	35%	30%	21%	48%	33%	38%	36%	39%
Participants without a role model	34%	34%	56%	17%	35%	37%	48%	27%	48%	27%

Question Below you will see the list of school subjects again. Please rate how good you think you are in each of them.
Base British participants with and without a role model
Parameter Top 2= “Very good” + “Extremely good”; Bottom 2= “Not good at all” + “Slightly good”

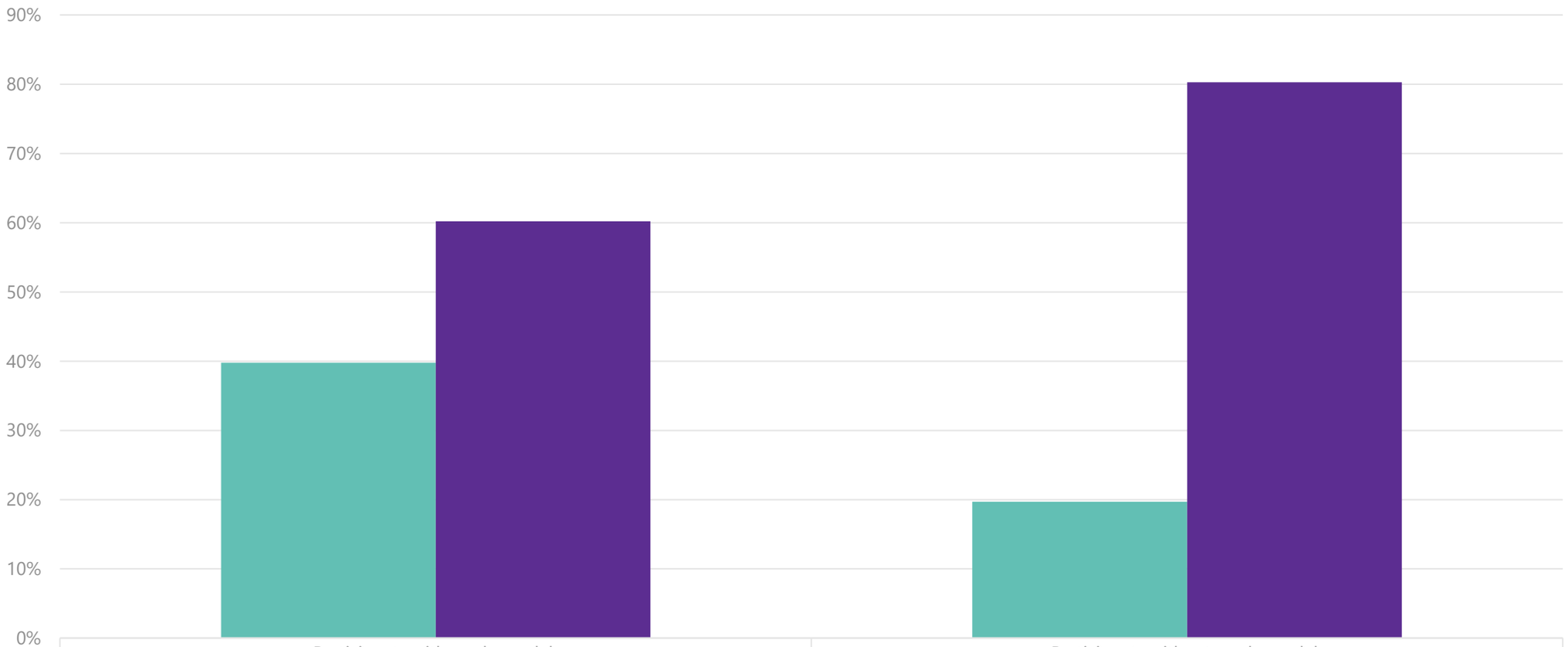
Imagining to work in a STEM discipline



	Participants with a role model	Participants without a role model
Yes	52%	32%
No	28%	52%
Don't know yet	20%	16%

Question Can you imagine yourself pursuing a career in one of the STEM disciplines – that is, Science, Technology, Engineering and Mathematics?
Base British participants with and without a role model

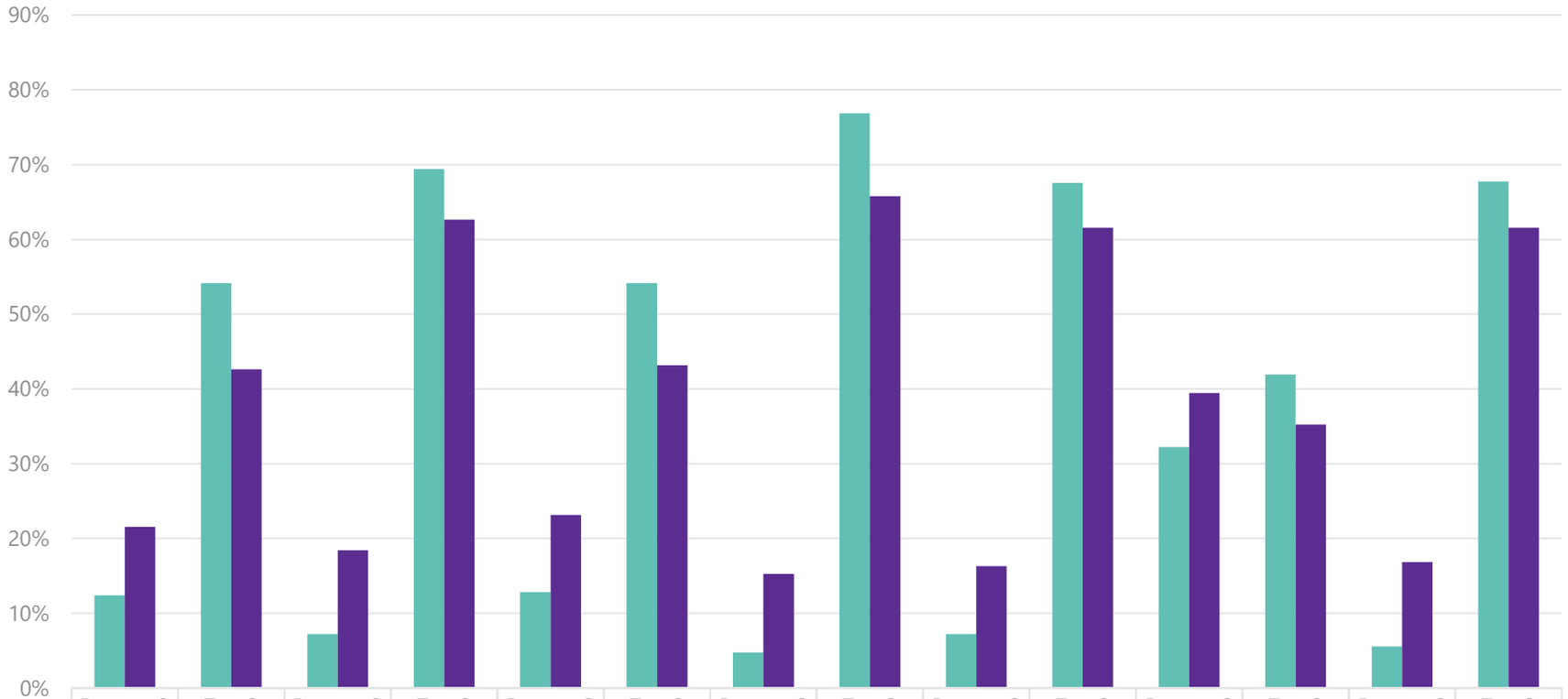
Is your current professional occupation STEM related?



	Participants with a role model	Participants without a role model
Yes	40%	20%
No	60%	80%

Question Is your current professional occupation STEM related?
Base British participants with and without a role model

Desired encouragement

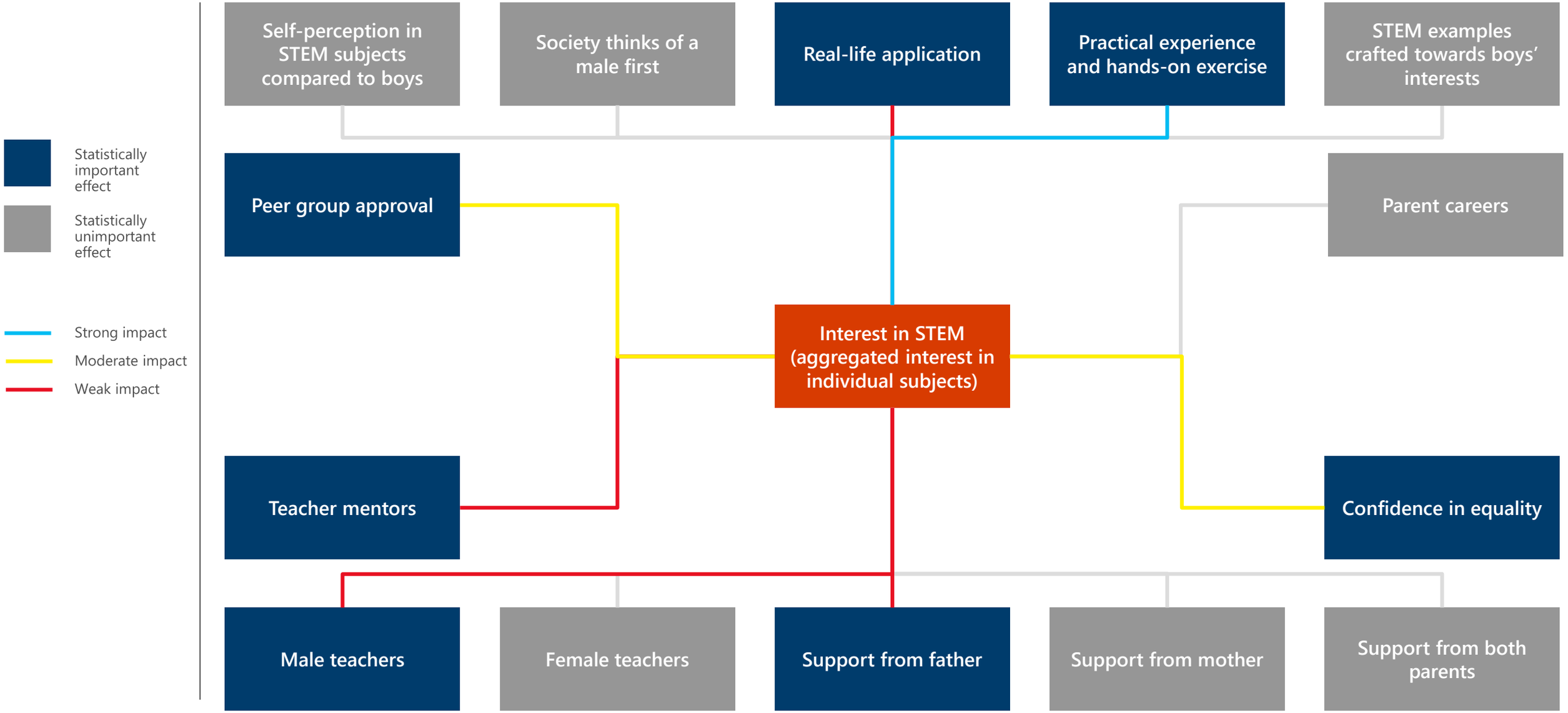


	Parents		Teachers		Friends		Women working in STEM		Famous STEM people		Celebrities		Famous institutions in STEM	
	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2
Participants with a role model	12%	54%	7%	69%	13%	54%	5%	77%	7%	68%	32%	42%	6%	68%
Participants without a role model	22%	43%	18%	63%	23%	43%	15%	66%	16%	62%	39%	35%	17%	62%

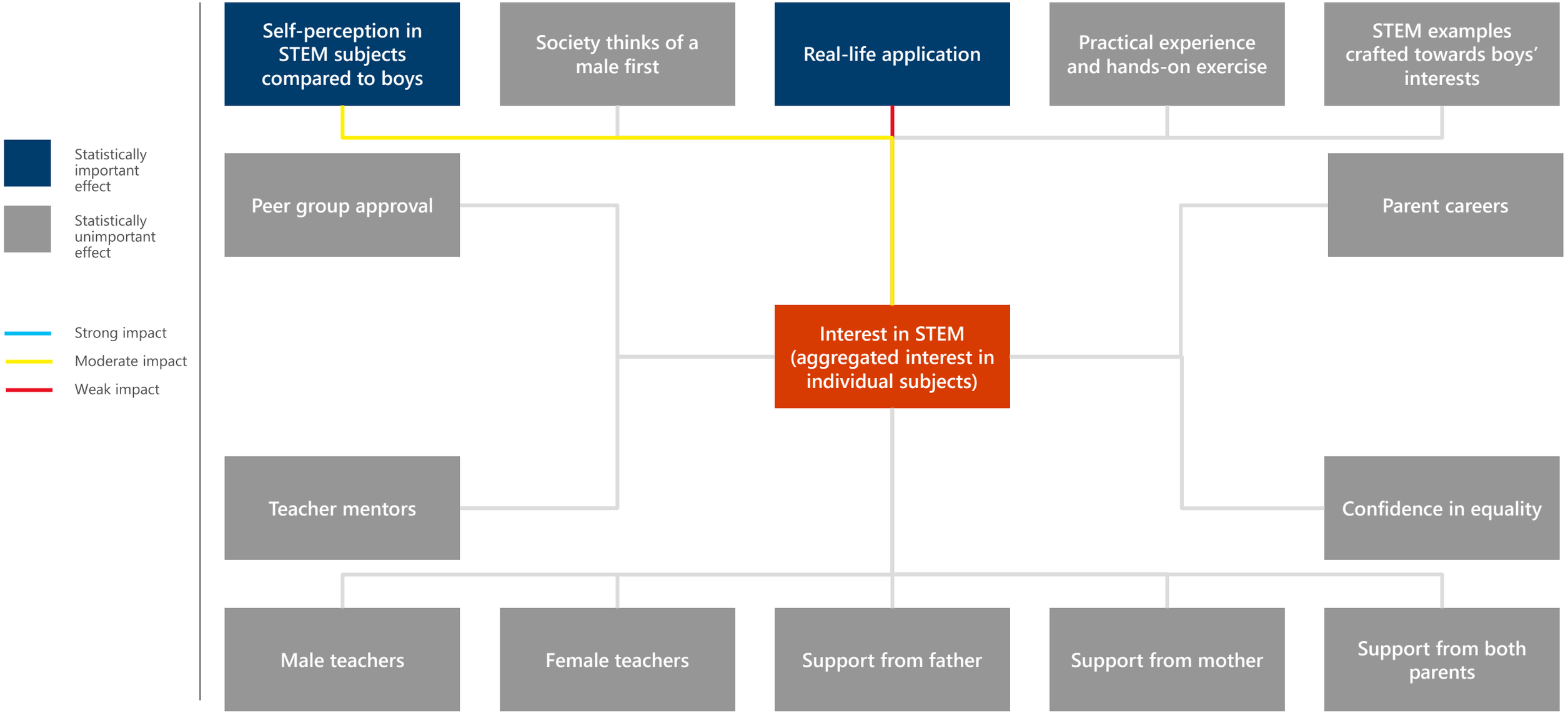
Question When you think of STEM, would you like more encouragement from the people below?
Base British respondents with and without a role model
Parameter Top 2= "Tend to agree" + "Strongly agree"; Bottom 2= "Strongly disagree" + "Tend to disagree"

The Why: perception testing on STEM/science

‘Why Model’ – Participants with a role model



‘Why Model’ – Participants without a role model



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