Choice or Consequence? Explaining Differences in Female Participation in Mathematics, Science and Technology in the Netherlands and Sweden
Yazilitas, D.

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Download date: 12. Apr. 2024
Dear participant,

Thank you for participating in this research.

We are doing this research to find out how you, as students in gymnasium, think about your future choice of what to study and, in particular, choosing or not choosing natural science studies. With natural science we mean fields of study that fall under the scope of natural and computer sciences, including mathematics, information science, Information and Communication Technology (ICT), physics, chemistry, pharmaceutics and biology.

The questionnaire is completely anonymous, so you don't need to fill in your name, nor will your name be registered anywhere else.

When there are questions you don't want to answer, please feel free to leave them blank.
A. Future study choice preference

A1 In which year and type of natural science program are you now in?
   ○ Year 1
   ○ Year 2
   ○ Year 3
   ○ Natural Science – Natural Science combination
   ○ Natural Science – Social Science combination
   ○ Other, namely…………………………………………………

A2 Do you want to go to university after finishing gymnasium? With university we mean both högskola and universitet.
   ○ Yes
   ○ No – please skip question A3 and continue with the questionnaire
   ○ I don’t know – please skip question A3 and continue with the questionnaire

A3 If you do want to continue your studies at university, which field are you thinking of choosing? You can choose more than one.
   ○ Economics (business administration, business analytics of international business)
   ○ Healthcare (medicine, dentistry, biomedical sciences)
   ○ Technology (civil engineering, industrial design, building engineering)
   ○ Natural science (mathematics, information science, ICT, physics, chemistry, pharmaceutics)
   ○ Law (legal studies, European law, international law, fiscal law)
   ○ Behaviour and Society (psychology, political science, communication science, sociology, anthropology)
   ○ Language and Culture (Swedish, art history, philosophy)
   ○ Something different, namely………………………………………………………………………………

A4 Please indicate below what you think about natural science fields by checking the circle that is closest to your own experience (the middle circle means you are neutral). Natural science fields are:

<table>
<thead>
<tr>
<th>Category</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>Boring</th>
<th>Not for me</th>
<th>Frustrating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Interesting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Something for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To what extent do you agree with the following statements that compare natural science fields to other fields of study?

<table>
<thead>
<tr>
<th></th>
<th>Natural science are more fun to study</th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b</td>
<td>Natural science lead to more interesting jobs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c</td>
<td>Natural science provide more opportunities to develop yourself</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d</td>
<td>Natural science have better job opportunities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>e</td>
<td>Natural science fit better with my current program in gymnasium</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>f</td>
<td>With natural science it's easier to find jobs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g</td>
<td>Natural science provide you with better future prospects</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>h</td>
<td>With natural science you have more options</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>i</td>
<td>Natural science leads to jobs that allow you to combine work with having a family more easily</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>j</td>
<td>Natural science leads to jobs where you get to work more with other people</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>k</td>
<td>With natural science you can have a more comfortable life style</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>l</td>
<td>With natural science you can earn more money later on</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>m</td>
<td>With natural science you are less likely to become unemployed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>n</td>
<td>With natural science you have more status</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>o</td>
<td>With natural science you have nicer co-students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>p</td>
<td>For natural science you get more homework</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>q</td>
<td>For natural science you have to work harder to get good grades</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
# B. School and mathematics, physics, chemistry and biology

## B1 To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>Statements</th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I am worried that university is too difficult for me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b. I am worried about graduating from gymnasium</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. I am worried that my grades are not good enough to get into the university and the study field of my choice</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## B2 To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>Statements</th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The highest possible grade average is important for university entry</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b. You need straight A’s in mathematics, physics, chemistry and biology to get in to natural science at university</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. Going to a top ranking university is more important for the future than the field of study</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## B3 To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>Statements</th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I think I can easily do natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b. I have talent for natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. I think natural science are difficult</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d. I worry about my grades in natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>e. I am worried that natural science is too difficult for me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## B4 Please indicate below which fields of study in higher education you think you are able to choose with your current grades. **We want to know which studies you think you are able to choose, not what you want or plan to choose** (multiple answers are possible when you can choose multiple programmes):

- Economics (business administration, business analytics international business)
- Healthcare (medicine, dentistry, biomedical sciences)
- Technology (civil engineering, industrial design, building engineering)
- Nature and Computer Sciences (mathematics, information science, ICT, physics, physics, chemistry or pharmaceutics)
- Law (Legal Studies, European Law, international Law or fiscal law)
- Behaviour and Society (psychology, political science or communication science)
- Language and Culture (Swedish, Art History or philosophy)
- Something different, namely………………………………………………………………………………….
B5 What was your last grade for mathematics, physics, chemistry and biology? If you currently don’t have these subjects leave the field empty.

<table>
<thead>
<tr>
<th></th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Mathematics</td>
<td>.......</td>
</tr>
<tr>
<td>b. Physics</td>
<td>.......</td>
</tr>
<tr>
<td>c. Chemistry</td>
<td>.......</td>
</tr>
<tr>
<td>d. Biology</td>
<td>.......</td>
</tr>
</tbody>
</table>

B6 To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th></th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Natural science are more suitable for boys than girls</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b. Girls have to make more effort for natural science than boys</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. Natural science are less interesting for girls than boys</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d. Boys have more talent for natural science than girls</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
C. Others with a natural science education background

Several of the statements below are about your mother, father, older brother(s) and/or sister(s). In case you don’t live with your biological parents, you can answer the questions for your step, foster or adoptive mother, father, brother(s) and sister(s). **When a certain statement doesn't apply to you, for example because you don't have an older brother or sister, than you can leave the question unanswered.**

<table>
<thead>
<tr>
<th></th>
<th>To what extent do you agree with the following statements?</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>My father's opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>My mother's opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>I have one or more older brother(s) who studies or studied natural science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>I have one or more older sister(s) who studies or studied natural science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>My close friends want to choose natural science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>Most boys in my class want to choose natural science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>Most girls in my class want to choose natural science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>My classmates' opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>My older brother(s)' opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j.</td>
<td>My older sister(s)' opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k.</td>
<td>My friends' opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l.</td>
<td>My teacher's and/or study counsellors' opinion is important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**C1** To what extent do the following statements apply to you?

<table>
<thead>
<tr>
<th></th>
<th>Very applicable</th>
<th>Applicable</th>
<th>Neutral</th>
<th>Not applicable</th>
<th>Not applicable at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>My father studied natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b.</td>
<td>My mother studied natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c.</td>
<td>I have one or more older brother(s) who studies or studied natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d.</td>
<td>I have one or more older sister(s) who studies or studied natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>e.</td>
<td>My close friends want to choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>f.</td>
<td>Most boys in my class want to choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g.</td>
<td>Most girls in my class want to choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>h.</td>
<td>I know interesting men who studied natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>i.</td>
<td>I know interesting women who studied natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**C2** To what extent do the following statements apply to you?

<table>
<thead>
<tr>
<th></th>
<th>Very applicable</th>
<th>Applicable</th>
<th>Neutral</th>
<th>Not applicable</th>
<th>Not applicable at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>My father thinks I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b.</td>
<td>My mother thinks I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c.</td>
<td>My friends think I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d.</td>
<td>My teacher(s) and/or study counsellor thinks that I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>e.</td>
<td>One or more older brother(s) thinks that I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>f.</td>
<td>One or more older sister(s) thinks that I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g.</td>
<td>My classmates think I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>h.</td>
<td>Other people that are important for me think that I should choose natural science</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
C3 To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th></th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. My father’s opinion is important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b. My mother’s opinion is important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. My friend’s opinion is important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d. My teacher’s and/or study counsellors opinion is important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>e. My older brother(s)’ opinion is important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>f. My older sister(s)’ opinion is important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g. My classmates’ opinions are important to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
D. Background questions

D1 In which month and year were you born (fill in:)

D2 Are you a boy or a girl?
- Boy
- Girl

D3 To which background do you belong (you can choose more than one)
- Swedish
- Finnish
- Iraqi
- Bosnian
- Serbian or Montenegrin
- Iranian
- Other, namely

D4 Where were your mother and father born?

<table>
<thead>
<tr>
<th></th>
<th>Mother</th>
<th>Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Sweden</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>b. Finland</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>c. Iraq</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>d. Bosnia and Herzegovina</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>e. Serbia and Montenegro</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>f. Iran</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>g. Other, namely</td>
<td>........</td>
<td>........</td>
</tr>
</tbody>
</table>

D5 What is the highest finished education level of your mother and father?

<table>
<thead>
<tr>
<th></th>
<th>Mother</th>
<th>Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Primary school (grundskola)</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>b. High school (gymnasieskola)</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>c. Vocational education (yrkesutbildning)</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>d. University</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>e. I don’t know</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>f. Something different, namely</td>
<td>........</td>
<td>........</td>
</tr>
</tbody>
</table>

D6 What is the current employment status of your parents?

<table>
<thead>
<tr>
<th></th>
<th>Mother</th>
<th>Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Works full-time</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>b. Works part-time</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>c. Takes care of the home full-time</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>d. Doesn’t work at present</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
### D7 To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>Statements</th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Totally disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. My parents have a good income</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>b. My parents are worried about loosing their jobs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>c. My parents are worried about my future prospects (framtidsutsiker)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### D8 How do you expect your future looks like in 20 years?

………………………………………………………………………………………………………………………
………………………………………………………………………………………………………………………
………………………………………………………………………………………………………………………
………………………………………………………………………………………………………………………
………………………………………………………………………………………………………………………

### D9 Additional questions or remarks:

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………………………………………………………………………………………………………………………
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Thank you for filling in the questionnaire!