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Tackling the gender gap in who studies economics in the UK

Maria Georgouli Loupi (Goldsmiths, University of London)
Danielle Guizzo (University of Bristol)
Sarah Smith (Discover Economics, University of Bristol, IFS, CEPR)

April 2025

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When economics is tested by future challenges, I hope that our profession will be able to say that we have done all we could to attract the best people and the best ideas

Janet Yellen, Former US Secretary of the Treasury and Chair of the Federal Reserve speaking at the National Summit on Diversity in the Economics Profession, Washington, 2014

It's our fault. We're doing something wrong. We are not giving a sense ... that economics is about people. And the psychologists and sociologists are really excited about that; they say, oh yeah, you want people, we got people; they don't have people, they got markets, they got numbers, they got alphas and betas. So we have to do a much, much better job telling young people that economics is about people. It's about inequality, it's about development, it's about health, it's about everything

Claudia Goldin, Henry Lee Professor of Economics, Harvard University and 2023 Nobel Prize Winner, speaking on Why Women Won at the London School of Economics, 2024

Economics is too important to be left to half the population

Stephanie Flanders, Senior Executive Editor for Economics at Bloomberg

Executive summary and recommendations

Boys outnumber girls in economics at school and university by two-to-one. Any successful initiative to tackle this under-representation needs to understand what factors deter girls from studying economics. This report combines the findings from quantitative and qualitative research into girls' (and boys') perceptions of economics with the aim of identifying what the potential barriers are and how to overcome them.

We identify three sets of issues – perceptions of the subject, perceptions of economics students and perceptions of careers.

- **Perceptions of the subject:** Both boys and girls hold a stereotyped view of economics as being about money and data analysis; they also struggle to differentiate economics from business. Girls do not think that economics will be interesting or enjoyable; they see economics as a hard subject and not one that they will do well in. The association of economics with maths is an issue for girls. Their perception of economics and maths contrasts with a very positive perception of psychology. Boys also see economics as relatively hard, but are more likely to see it as interesting and enjoyable and as a subject that they will do well in.

- **Perceptions of economics students:** Girls are aware of the gender imbalance in economics classrooms. This is not in itself a concern. Instead, they are more likely to be put off by their view of economics students as a particular type of male, one who is clever, opinionated and competitive.

- **Perceptions of careers:** Girls do not think that studying economics will lead to an enjoyable job. They have little clear understanding of what economics graduates do, other than a vague notion of "9 to 5 office jobs", which they do not aspire to. They value opportunities for travel and flexibility, and also stability. They associate economics with well-paid jobs, but not stable employment, compared e.g. to medicine.

In order to address these issues, we suggest the following:

Better information on what economics is about

There is a strong policy need for students to have good information about what different subjects are about before they make high-stakes decisions about what to study. This applies not only to economics, but also to psychology and other subjects that students have not previously studied. Taster sessions and events have been shown to be effective at breaking down subject stereotypes. However, to gain wider reach, engaging resources (brochures and leaflets) should explain the breadth of economics – and differentiate economics from business – in a clear and accessible way. There is a case for some of these resources to be specifically targeted at girls.

Ensuring that maths is not a barrier

Maths is an important tool in economics but it should not be a barrier to entry. Currently, there is a self-confidence gap that may deter girls from studying maths and associated subjects (Buser et al, 2014) and we would encourage measures to build girls' confidence – for example, a clear message that girls do just as well as boys in economics. Beyond this, there is also scope to clarify the role and relevance of maths in economics degrees, differentiating between abstract economic theory and the more practical, mathematical skills that may not only be more attractive, but also more useful for future careers. Students who are interested in what economics can offer should not feel alienated by the prominence of abstract mathematical methods or a perception of a narrow analytical approach that feels disconnected from their interests or pressing social issues. Curricula emphasising real-world issues and showing how mathematics and statistics are linked to empirical data or tangible policy questions have been shown to be more appealing to diverse audiences (see Bayer et al, 2020).

Addressing the economics student stereotype

It is important to counter the stereotype of an economics student as an arrogant, competitive male. This could be done by, for example:

- showcasing a range of (male and female) economists who do not conform to traditional perceptions;
- highlighting collaborative and socially impactful aspects of economics (for example, models of co-operation and pro-social behaviour, applications to health, development, climate change); and
- ensuring that economics teaching is inclusive and accessible – emphasising real-word topics that connect with students' experiences and interests and encouraging classroom dynamics that allow for diverse voices to be heard, rather than rewarding "know-it-all" attitudes.

Improving awareness of career opportunities

Alongside information on what economics is about, students need information about – and concrete examples of – career options for economics graduates and apprenticeships. In particular, we suggest showcasing a range of examples of female economists, including those doing jobs that do not conform to the "9-to-5 office job" stereotype and that offer flexibility and opportunities to travel. Girls' lack of awareness of career options likely comes from a lack of visible economist role models in everyday life and in the media.[1] Work experience/ insight opportunities would allow students to gain hands-on experience and would help build understanding of "what economists really do", both through direct participation and word-of-mouth.

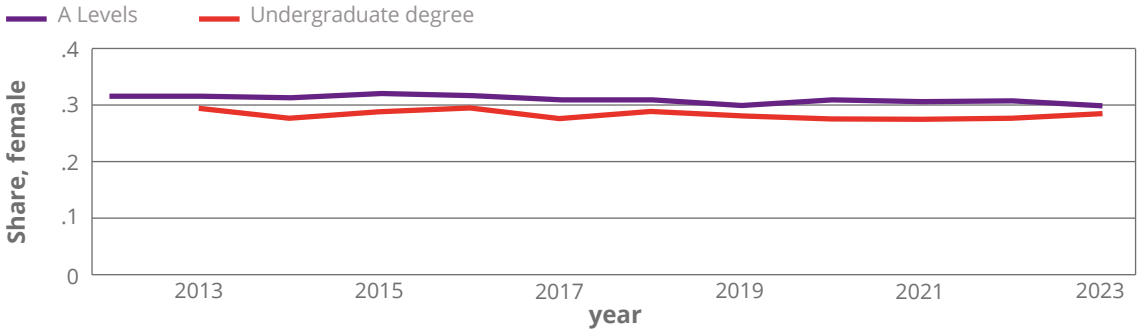
1 Lists of "best films about/ to teach economics" typically include Wall Street, Wolf of Wall Street, Moneyball. A Beautiful Mind and The Big Short. An alternative list could include Crazy Rich Asians, The Lorax, Dirty Pretty Things, Don't Look Up and Working Girl.

1 Introduction

Boys outnumber girls in economics in the UK by more than two-to-one. Economics is growing in popularity, but the gender gap has persisted and, if anything, has grown wider over the last decade. This contrasts with STEM subjects where gender gaps have been narrowing. But, unlike STEM there have been, to date, no large-scale initiatives to attract girls into economics.

To be successful, any initiative to attract girls to economics requires a good understanding of why girls are less likely to study economics. How do girls and boys perceive economics and economists? Are there specific factors that put girls off studying economics and what, if anything, might make economics more attractive to them? This is the focus of this report. We bring together the findings from new quantitative and qualitative research exploring girls' perceptions of economics, economists and economics careers. We identify key themes that emerge from both strands of research and we suggest possible ways forward.

Figure 1: Female share, Economics A level and Undergraduate Students



A level entries, 2023	Share, female	# entries	Growth since 2013
Maths	37.3%	88,253	+10%
Psychology	73.2%	76,535	+43%
Biology	63.5%	66,815	+17%
Chemistry	55.6%	55,512	+17%
English (language & literature)	75.6%	53,019	-26%
History	53.0%	43,944	-5%
Business Studies	39.7%	40,590	+50%
Art and Design	74.9%	40,496	-2%
Economics	29.4%	37,704	+63%
Physics	22.6%	34,832	+9%

Source/ notes: Office for National Statistics. Higher Education Statistics Authority. A level statistics are for England. An economics degree includes 50% or more economics. Year refers to academic year

Why economics needs girls and girls need economics

The under-representation of girls in economics is an issue for economics itself – it implies that economists are failing Janet Yellen's call to attract the best people and the best ideas. Given the central role that economists play in policy-making, through the Government Economics Service and the Bank of England, the under-representation of girls is arguably a wider, social problem since important perspectives and voices are absent. To quote former BBC economics editor and Executive Director of Economics at Bloomberg, Stephanie Flanders, "economics is too important to be left to half the population".

Meanwhile, girls are missing out on a subject associated with high graduate earnings. Economics graduates earn more than graduates in any other subject, conditional on their academic qualifications and socio-economic background (Britton et al, 2020). More than half of the five per cent earnings gap between male and female graduates can be explained by gender differences in subject choice and the relative under-representation of girls in such as economics, that are associated with higher graduate earnings (Advani et al, 2021). If students are selecting what subjects to study based on full information and with no cognitive biases, we could think that girls are optimally trading high pay for other desired outcomes. But this is not true if stereotypes and distorted beliefs are play a role in gendered subject choices.

What explains the gender gap? Not innate differences in ability

As with STEM, innate gender differences in objective economics ability are not a plausible candidate explanation for girls' under-representation in economics (Cassidy et al, 2018). Girls perform as well as boys in economics A level and out-perform them at university (Royal Economic Society, 2023).

Many economics degree programs have a maths requirement – and this is a factor in explaining girls' under-representation. At the very least, the higher share of boys taking maths A level accounts for a part of the gender gap at university (Crawford et al, 2018).

Our qualitative research also identifies the close association between maths and economics and perceptions of economics' "math-iness" as an issue. The gender stereotype that boys are better at maths than girls may affect girls' and boys' beliefs about their ability in maths and economics and their self-confidence (see, for example, Buser et al, 2014). It may also affects the beliefs – and behaviours – of teachers and parents (Carlana, 2019; Nicoletti, 2024). It is revealing that, in the focus group discussions, girls felt that teachers tended to recommend economics more to boys.

However, it is not just the association of economics with maths that deters girls from studying it. Maths now has a higher female share than economics, suggesting that there is something about the perceptions of economics and economists *per se* that deters girls. Our research seeks to understand those perceptions.

Lessons from other countries

Cross-country evidence speaks against innate economics ability and innate preferences as the key explanation for the under-representation of girls in economics. The gender gap in favour of boys is not universal and several Eastern European countries (including Lithuania, Latvia, Poland, Croatia, Slovakia) have proportionally more women graduating in economics than men (Megalokonomou et al, 2022). This cross-country variation points to a role for culture and institutions, including norms and beliefs.

The US and Australia have a similar level of female under-representation to the UK and have taken some steps to understand and address the problem.

The US Undergraduate Women in Economics (UWE) program, led and co-ordinated by Claudia Goldin and Tatyana Avilova (see Avilova and Goldin, 2020 and 2024), funded several initiatives to test different interventions to increase women's representation among economics majors. The following interventions had some success:

- providing information on grade distributions and telling female students that they have relatively done well in their first-year econ class (Bedard et al, 2021);

- emphasizing the broad range of topics studied by economists in an email to first-year economics students (Bayer, Jang and Wilcox, 2019) and introducing a new first-year economics course on real-world applications (Bayer, Bruch, Chetty and Housiaoux, 2020);

- exposing first-year female economics students to female alumni (Porter and Serra, 2020; Halim, Powers and Thornton, 2022; Patnaik et al, 2024). This mirrors positive same-gender faculty role model effects (Canaan and Mouganie, 2021).

These initiatives are encouraging and have useful insights into what might work to encourage female students, but it is worth noting that their target is to encourage female students who are already taking first-year econ to choose an econ major. This can be thought of as tacking economics' "persistence problem".[2] In the UK, the biggest challenge is how to encourage more diverse students to take up economics at A level or at university ("the entry problem").[3]

More closely related to our study, Buzard et al (2025) published the initial findings from a survey of first year university students in two US institutions, designed to explore "their perceptions of the economics major, concerns about the economics discipline, as well as specific factors that attract or deter them from studying economics". Their results are that female students are less likely than male students to think they will succeed in economics – and are more likely to think that economics is a field for people with strong maths skills. Female students are also less likely to think that they will enjoy the subject and future careers, but are more likely to see economics as primarily concerned with traditionally male-stereotyped topics and career paths (stock market, money, finance, and investments), topics they are less interested in.

Surveying around 5,000 high school students in New South Wales, Livermore and Major (2020) also found that girls were less likely than boys to find economics interesting and to think that they would do well. Girls had fewer clear perceptions of career opportunities from studying economics, although they were less likely than boys to perceive economics as a career for men.

Our contribution

Our research adds to these studies in the following ways:

First, we conduct a large-scale quantitative survey of male and female school students, asking them about their perceptions of economics, and of business, maths and psychology. Focusing on relative perceptions of different subjects is important since this is what drives subject choices. For example, a striking finding is not how negative girls are about economics, but how positive they are about psychology. The comparative perspective also enables us to see – and control for – any gender differences that affect perceptions of all subjects, eg if girls generally think they will do worse compared to boys. It also allows us to determine how much of the gender difference in subject choices is attributable to girls' and boys' beliefs about different aspects of what it would be like to study subjects versus the weights girls and boys attach to different aspects (how much do girls and boys care about enjoying a subject versus getting a well-paid job, for example).

Second, the focus group discussions complement the quantitative survey analysis to provide uniquely rich insights into how girls perceive economics and economists, exploring their views, opinions and beliefs about what they find (un)appealing and (un)interesting in greater depth.

2 Bayer, Hoover and Washington (2020) contains an excellent discussion of the under-representation and lack of progress of Black, Latino and African American students in economics. However, the focus is on the experiences of students within the subject (the persistence problem).

3 In the UK system, students who want to study economics at university must apply to study the subject (as single or joint honours) directly from school. Unlike the US, there is not an option to attract more diverse economics majors from among first-year (econ) students. Taking economics A level provides the most common route into studying economics at university; girls who take economics A level are less likely to progress to a degree than boys; however, the progression gender gap from A level is dwarfed by the entry gender gap into A level (i.e. fewer girls than boys taking A level economics).

Main findings

The main findings from the quantitative and qualitative research can be grouped into three main themes – perceptions of what economics is about, perceptions of economics students (and economists) and perceptions of economics careers.

Perceptions of economics

Both girls – and boys – have a stereotyped view of economics; they associate it most strongly with money and data analysis and not with consumer behaviour, inequality and happiness & well-being (all topics in the A-level economics curriculum). Students also struggle to differentiate economics from business, girls slightly more than boys (they associate marketing equally with economics and business, for example). Poor understanding of what subjects are about is not unique to economics; it also applies to psychology and to a lesser extent business.

Similar to previous studies, we find that girls have a more negative perception of economics than boys; they do not think that it is an interesting or enjoyable subject. One reason for economics' relatively unpopularity with girls can be explained by a "positive psychology" effect. Girls think that psychology is the most interesting and enjoyable subject (compared to economics, business and maths) and the subject in which they are most likely to do well. By contrast, boys tend to differentiate economics from business in a more positive way – they think they will do relatively well in economics, for example.

Girls do not think they will do well in economics. Economics' association with maths deters girls (even when they learn that economics is about inequality and well-being). Girls' perceptions of maths are even more negative than those of economics: The fact that they are more likely to say they will study maths, compared to economics, may reflect the success of a "STEM" push.

Perceptions of the identity of economics students

Girls are aware of the gender imbalance in economic classes, but do not explicitly see this an issue. However, they see economics students not only as male, but as a particular type of male – clever, opinionated and competitive – that they do not see themselves easily making friends with.

Perceptions of economics careers

Girls rank economics the lowest (behind psychology, business and maths) on leading to a job that they will enjoy. They have limited understanding of what economists do and have few economist role models. They are vague about the career options associated with economics, but they see them as being quite narrow and limited to "9-5 office jobs". They do not aspire to these kinds of jobs, instead valuing opportunities for flexibility and travel. They also value stable employment, and, while they see economics as leading to well-paid jobs, they do not perceive it as offering the same kind of stability as, for example, medicine.

The next two sections provide more detailed information on the methodology and findings of the quantitative research (Section 2) and of the qualitative research (Section 3).

"We find that girls have a more negative perception of economics than boys; they do not think that it is an interesting or enjoyable subject"

2 Quantitative evidence

2.1 Methodology and sample

The quantitative survey was conducted as part of a national programme of economics outreach, run by Discover Economics (www.discovereconomics.co.uk). This Royal Economic Society initiative creates opportunities for young people (aged 15-17) to find out what economics is about, with the aim of challenging stereotyped beliefs about economics and ecownomists and broadening the subject's appeal. It is aimed at under-represented groups, including not only girls but also students from more disadvantaged backgrounds.

The national outreach programme began in 2022-23. "Student champions" (current economics undergraduate students) delivered sessions – consisting of the champion's personal story, some economics content and careers/ earnings information – to non-economics students in Years 10 and 12 during regular lessons in other subjects (typically maths, business or "general" lessons). The champions administered a short survey, either at the start of their session (pre-survey) or at the end of their session (post-survey). We focus here on the pre-survey responses, which capture girls' and boys' baseline perceptions of economics. Smith et al (2025) provides further detail on the outreach programme and evaluation of the effect of the sessions.

The survey, included in full as Appendix A1, asked the following (sets of) questions about four subjects – economics, maths, business and psychology:

- Students' subjective likelihood (on a scale of 1-10) of studying the subject at the next stage of their education (i.e. A levels or equivalent for Year 10 students and university for Year 12 students).
- Students' understanding of what the subject is about. Specifically which – from a list of – topics they would study in each subject.
- Students' beliefs about different aspects of what it would be like to study the subject.

Sessions were delivered in 96 schools (5,323 students); completed surveys were returned for 86 schools (3,700 students). All are non-selective state schools.[4] Summary statistics on the schools and students are given in Appendix A2.

We focus the analysis on the survey results for Year 10 students (a full set of comparable results for year 12 is shown in Appendix A4). Year 10 offers a larger sample (2,375 students) and is also more representative of the entire year group (the year 12 students have already selected to study maths and business). Maths is taken by all students in Year 10, although we targeted higher-performing maths classes.[5] The share of students reporting that they are eligible for Free School Meals is slightly lower than the school-level average. This may reflect the selection of students into the targeted classes, although there is also a high proportion of students who did not report their eligibility.

2.2 Main findings

Likelihood of studying economics

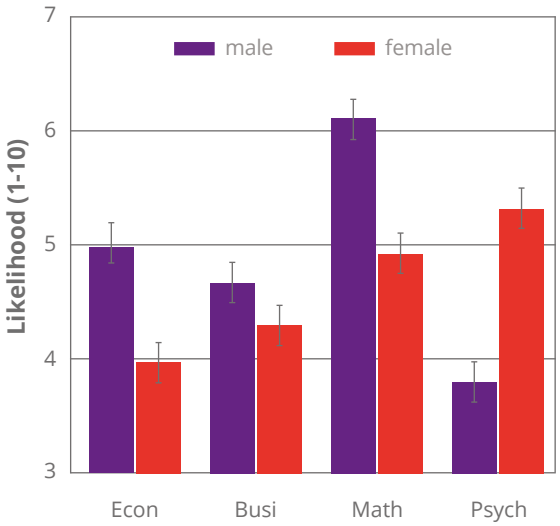
There is a gender difference in the reported likelihood of studying different subjects at A level equivalent. The ordering of the subjects, shown in Figure 2, is in line with population A level choices (Girls: Psychology > Maths >

4 They are broadly typical of UK state schools: 92 per cent of the schools were nationally rated as Good or Outstanding, compared to 89 per cent of all schools. The average share of pupils on Free School Meals (an indicator of low-incomes) was 22.8 per cent; the national figures were 23.8 per cent in 2022 and 24.6 per cent in 2023.

5 Specifically, we suggested to teachers that the sessions would be suitable for students who were on target to achieve Grade 6 or above at GCSE (out of a maximum of 9). This is the threshold for eligibility for the Government Economics Service degree apprenticeship which does not have an A-level maths requirement (nor any economics pre-requisite).

Business > Economics. Boys: Maths > Economics > Business > Psychology). Girls are less likely than boys to report that they will study maths and economics and to a lesser extent business; they are more likely to report that they will study psychology. The corresponding numbers are given in Appendix A3, Table A3.1, together with plots of the full distributions of responses (Appendix A3, Figure A3.1).

Figure 2: Likelihood of studying economics, business, maths and psychology (Year 10)



Understanding of what economics – and other subjects – are about

We measure students' understanding of what the four subjects are about by showing them a set of topics and asking them to pick which of the four subjects cover each of the topics (students are told that they can assign each topic to more than one subject). The set of topics (shown in Table 1) was selected from the relevant A-level curricula; the correct subjects are highlighted in the Table – memory is a topic in the psychology curriculum, data analysis is in all four subjects, and so on.

The numbers in the first eight rows of Table 1 show the proportions of girls and boys identifying the topics with each of the subjects (for example, 82 per cent of boys and girls think that memory is a topic they will study in psychology). There are also summary measures of the share of correct answers for each subject and the (mean) total number of topics associated with each subject. The latter captures students' perceived breadth of a subject (out of a maximum of five for economics, three for business and psychology and two for maths).

Both boys and girls associate most topics with the correct subjects (memory with psychology, money with economics, market-

Table 1: Students' baseline subject concepts (Year 10)

	Economics		Business		Maths		Psychology	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Memory	0.221	0.314	0.203	0.311	0.322	0.438	0.817	0.818
Data Analysis	0.838	0.787	0.826	0.718	0.806	0.719	0.391	0.299
Money	0.795	0.854	0.804	0.844	0.651	0.577	0.150	0.123
Consumer behaviour	0.536	0.514	0.763	0.728	0.137	0.112	0.645	0.587
Inequality	0.452	0.437	0.321	0.386	0.200	0.242	0.590	0.617
Marketing	0.623	0.609	0.650	0.891	0.323	0.242	0.269	0.174
Hypothesis testing	0.351	0.370	0.367	0.352	0.353	0.461	0.560	0.642
Happiness & wellbeing	0.247	0.282	0.246	0.248	0.058	0.085	0.825	0.871
Average correct	*0.58*	*0.57*	*0.66*	*0.65*	*0.68*	*0.69*	*0.54*	*0.55*
Number of topics	*4.05*	*4.15*	*4.37*	*4.47*	*2.85*	*2.87*	*4.23*	*4.11*

ing with business and so on). Perceptions of business and maths are more accurate than perceptions of economic and psychology; students are more likely to have studied business and maths before, while economics and psychology are subjects that they will study for the first time at A-level.

In contrast to Buzard et al (2025), we find that girls' and boys' perceptions of economics are very similar. They both associate three topics most closely with economics – money, data analysis and marketing. The majority of students do not associate economics with inequality or happiness & well-being – they are more likely to associate memory with economics than they are happiness & well-being. Instead, they most strongly associate inequality and happiness & well-being with psychology. Consumer behaviour ("people") is also more strongly associated with business (and psychology) than with economics. Overall, economics is perceived more narrowly, relative to the actual scope of the subject (an average total of 4.15 topics out of a possible five), compared to the other subjects.

Students also struggle to differentiate between economics and business. Both money and data analysis are topics equally associated with the two. Girls also associate marketing with business and economics to a similar degree, boys more strongly associate marketing with business.

Beliefs about what it would be like to study economics

Students' choices about what subjects to study will be informed by what they think it would be likely to study different subjects. We asked students for their beliefs across several dimensions of studying subjects, covering both what they think about their likely experience of studying different subjects (experience value), and what they think about the likely future outcomes associated with studying different subjects (investment value):

We ask about four dimensions of experience value:

- how **hard** they think a subject will be
- how **interesting** they think the subject will be
- how easy it will be to **make friends** studying a subject
- how much they think they will **enjoy** studying a subject

We ask about three dimensions of investment value:

- whether they think they will **do well** in the subject
- to what extent studying a subject would lead to a **well-paid job**
- to what extent studying a subject will lead to an **enjoyable job**.

The responses (on a scale from 1-10) are summarized in Figures 3 and 4. The corresponding numbers are given in Appendix A3, Table A3.1.

Experience value

Boys and girls both think maths is the hardest, and business is the easiest, of the four subjects. However, girls rate psychology as being similar to business and easier than economics and maths. Boys think psychology is harder than business and similar to economics. Girls rate economics, business and maths harder than boys do.

Boys and girls both think that psychology is the most interesting subject and maths the least. However, economics is a close second for boys. Girls rate psychology much more positively than economics, business and maths. Girls think they are most likely to make friends studying psychology and least likely to make friends studying maths, while boys put business first and economics second. In terms of enjoying a subject, economics is similar to business for both girls and boys, but for boys, these are the top two subjects, while for girls, psychology is first by a long way.

Investment value

Boys think they will do well in maths, business and economics. Although they think that maths is hard, this does not appear to be a barrier to doing them well. Girls think they will do well in psychology and business, much less so in economics and maths. Both boys and girls see economics, business and maths as subjects that will lead to a well-paid job, with little difference between these subjects. They all rate psychology lower; but girls less so than boys.

Girls rate psychology top as the subject that will lead to an enjoyable job. Boys have similar views about economics, business and maths, while girls are more negative about economics and maths.

Figure 3: Beliefs about different subjects, by gender: Experience value (Year 10)

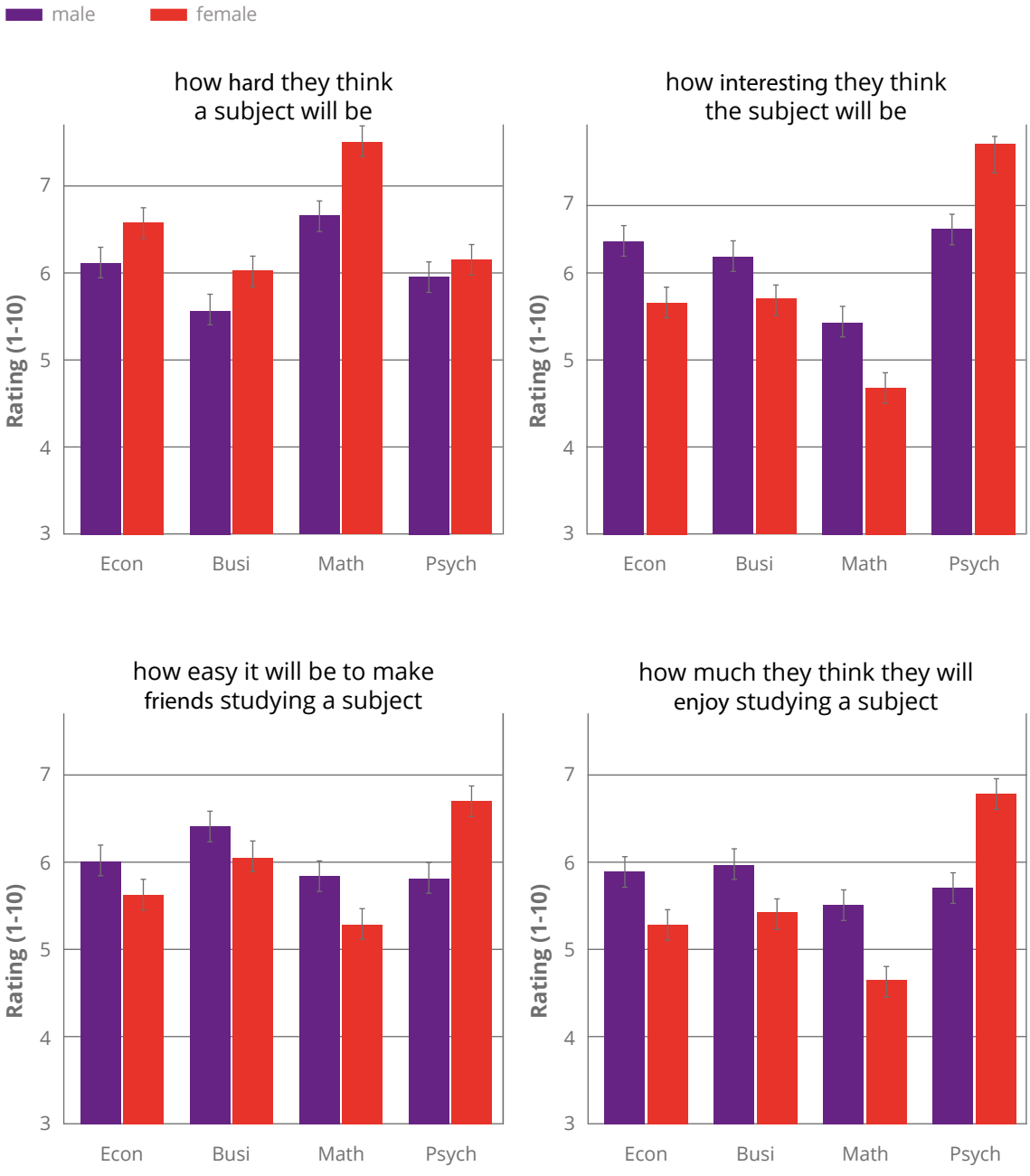
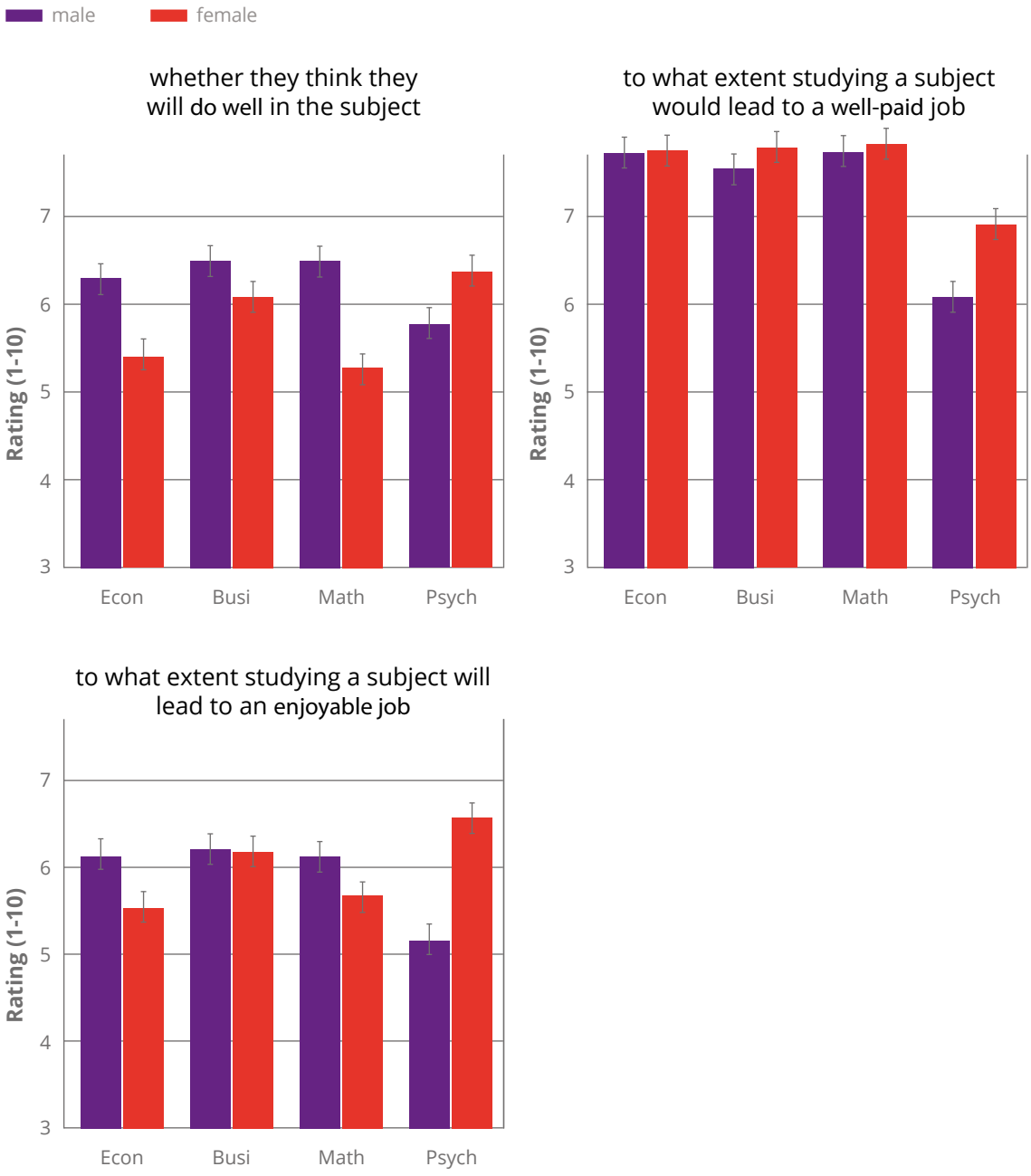


Figure 4: Beliefs about different subjects, by gender: Investment value (Year 10)



Gender differences in beliefs, or preferences, or both?

Subject choices are driven by beliefs about different aspects of what it would be like to study different subjects, but also by students' preferences, i.e. how important it is to enjoy a subject, compared to doing well or compared to choosing a subject that leads to a well-paid job. The gender differences in the likelihoods of studying different subjects shown in Figure 2 will reflect a combination of the differences in beliefs, shown in Figures 3 and 4, together with differences in preferences.

We can use the survey responses on the likelihoods of studying different subjects, together with students' reported beliefs, to estimate preference parameters. These preference parameters are the weights students' put on each of the different aspects in determining the likelihood of studying a subject. We run estimations separately for girls and boys to allow the estimated preference parameters to vary by gender. Further details of the estimation, together with the parameter estimates, are provided in an online appendix.

There are two take-aways. The first is that there are gender differences in preferences. Girls put most weight on enjoying a subject, while boys put most weight on doing well. Compared to boys, girls put more weight on enjoying a subject and more (negative) weight on finding a subject hard. Compared to girls, boys put more weight on making friends in different subjects.

However, the second take-away is that gender differences in preferences are less important than differences in beliefs in terms of explaining different subject choices. A decomposition of the overall gender differences in reported likelihoods shown in Figure 1 into the part explained by differences in beliefs and the part explained by differences in preferences indicates that differences in beliefs account for around 70 per cent of the difference in subject choices, with differences in preferences accounting for around 30 per cent.

> “Differences in beliefs account for around 70 per cent of the differences in subject choices, with differences in preferences accounting for around 30 per cent”

3 Qualitative evidence

3.1 Methodology and Sample

The research team carried out six focus groups with girls in Years 10, 11 and 12 in both mixed and girls-only schools in different regions in England (North, Midlands, South, and Greater London) between May and December 2024. Each focus group contained between 6 to 11 participants and lasted approximately one hour each. Sampled schools were selected to include those that did/ did not offer economics as an A-level option; from the three schools offering economics at A-level, two were offering the subject at GCSE.

To protect both participant anonymity and school reputations, we use only numeric identifiers. Schools were selected via the Discover Economics database and approached via email by a member of the Discover Economics network. The sample of schools is summarised below; information on characteristics of participants is provided in Appendix A2. The questionnaire used in all focus groups was prepared using a deductive approach, informed by key themes identified by previous studies, including emerging findings from the quantitative analysis. Our questionnaire contained a combination of direct questions, quick polls, visual descriptions and discussions.

The audio transcripts were analysed and coded with NVivo 14 following a two-stage process: firstly, with a thematic analysis (Brown and Clark 2006) to identify and code participants' answers; secondly, by adopting axial coding to filter core relationships between identified themes and group them for a refining of the main findings.

3.2 Findings

Three areas of findings emerged from a thematic analysis of the focus groups' interview transcripts and poll results, namely (a) perceptions of economics, (b) the (gender) identity of economics students and economists and (c) future careers.

Perceptions of economics

Girls' perceptions of the content of economics are significantly distorted. Many conflate it with business and accounting or view it solely as a study of money.

> *[W]e think economics is about maths and money. (School 1)*
>
> *I think that economics is about, you know, goods and services and monetary, you know, values and stuff. Because that's where you tend to see a lot. When it comes with Economics and Business is usually with services and money. (School 1)*
>
> *Kind of the same thing, like money and business. (School 2)*

We observe slight differences between girls in schools that offer economics in comparison to those in schools that do not. Girls with some exposure to the subject are more aware of how it contributes to an understanding of society at large. However, they emphasise finance-related topics as making up the subject, and frame economics as a science of the study of choices and behaviours rather than categorising it as a broad social science.

> *I'd say that I think economics is kind of sort of the study of like supply and de mand with sort of like human behaviour mixed in. So it's kind of like why like what incentives are there for people to do certain kind of like economic activities. (School 4)*
>
> *I mean, I think economics it's sort of like a study about like how the world works. But from like a finance perspective. (School 4)*
>
> *I guess, like oh, sorry, every like decision that you make, you've gotta finance somehow. So if that's like the budget or like you wanna put more funding in somewhere, so you need to have an understanding of like, what this money's actually gonna do. (School 5)*

Table 2: Focus group sample characteristics, by school

School #	Year group	Economics course offered (A levels)	Economics course offered (GCSE)
School 1	Year 10	No	No
School 2	Year 10	No	No
School 3	Year 10	No	No
School 4	Year 10 and Year 12 (mixed)	Yes	Yes
School 5	Year 12	Yes	Yes
School 6	Year 11 and Year 12 (mixed)	Yes	No

Focus Group Questionnaire

1 Likeliness to study a subject

Which A-level subjects are you doing or considering, and why? For students who chose economics, why was that?
Which subjects are you considering studying at university, and why?

2 University subject choices

What factors do they think about when making a university course choice?
Where do they look for information?
How important is it to do something you find interesting and enjoy *versus* thinking about future careers and earnings?

3 Perceptions of Economics and Economists

What do you think economics is about?
What do you find (un)appealing about it?
Do you associate it with mathematics? How does it make you feel about it?
What do you think economics students would be like? Do you think you would make enough friends?
What careers do you think you could have with an economics degree?
What are some reasons why you would not choose it as a career? Do future earnings influence your choice?

4 Economics versus other subjects

Would finding out more about psychology, business or sociology versus how they perceive the subject make it less appealing?

Focus Group Polls and Visual Activity

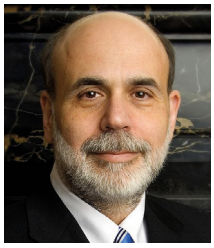
Poll 1: What do you think is important to study in economics?

A. Inequality and poverty
B. The environment
C. Economic Crises
D. Economic growth, development
E. Other forms of inequality (gender, ethnicity, citizenship)
F. Human decisions and behaviours
G. Firms, production, competition
H. Money, monetary policy, central banks

Poll 2: Which subjects are you considering studying at university?

Poll 3: From the people pictured below, who

- do you think is an economist?
- would you feel comfortable talking to/approaching?
- transmits an image of helping others?
- transmits an image of being a professional?
- transmits an image of being successful in their career?



Most girls perceive economics as a difficult and uninteresting subject to study, even at school. However, this perception shifts among girls whose schools offer A-level economics, particularly after they have personal experience with the subject. This suggests that early exposure to economics can positively influence their perspective on the subject.

> *I [don't] know how to put it any other way, but I prefer more creative things. […] I haven't seen many creative aspects towards it. I'm not the most educated on it though, so. (School 3)*
>
> *Yeah, I thought it was going to be really difficult because that's why everybody was saying about it. And that it was really hard.*
>
> *[Do you find it difficult now?]*
> *Ehm it's difficult at first, but then once you get taught it, then you get used to it and start to understand it. So it's become easier. (School 4)*
>
> *Recently I've been like more enjoying economics and maths so you can do economics and statistics together for a degree. (School 4)*

Some participants mention finding economics "interesting", but struggled to articulate what that is, apart from a vague understanding that it is useful to know economics if you want to understand how the world works and how to make personal financial decisions.

> *I don't know. I just. I like the way that everything links into each other. I find it really interesting. (School 5)*
>
> *I don't know. I feel like there's always like some economic like, issue that people are trying to solve. (School 5)*

The most unappealing aspect of economics, by far, is its association with mathematics. This is true even for girls who claim to enjoy it or who perform well in mathematics. They are reluctant to choose it as university degree and pursue a career that they perceive as primarily based on mathematics – they would prefer studying single-honours mathematics at university than doing an economics degree.

> *I feel like maths is definitely associated with economics and they go hand in hand. So if you are good in maths, you can do economics. (School 1)*
>
> *I do associate maths with economics because you tend to find that there's a lot of mathematical influence on economics. However, that's not something that would hold me back because I find maths quite interesting. (School 1)*
>
> *[Why do you like mathematics?] I'm quite good at it. (School 2)*

Girls taking A-level economics are surprised to find that mathematics played a smaller role than expected. However, they remain convinced that an economics degree would require extensive mathematical training.

> *Economics so, well, personally, I'm not a big fan of maths and that's why I find unappealing about economics. But the more that I'm like learning economics, the more I'm finding out that maths isn't that like, it's not as huge as what we learn compared to like what we learn about how it helps society and how it functions, et cetera. (School 4)*
>
> *I would like associate with math because I think the graphs and you've gotta like work out like taxes and stuff, but I don't think it's like as much maths as like I thought it's going to be. (School 4)*
>
> *I don't mind the maths in economics A level I actually find I'm very comfortable with the amount of it. I think it's just going on to do a degree. I feel like it would be largely maths and I could just do a maths degree (School 5)*

Girls express a willingness to pursue economics at university if it involved less mathematics. While they are interested in subjects such as inequality and decision-making, they recognise that these areas must be examined through specific methodologies, which they perceive to be in the mathematical language. Participants were aware that curricula in economic departments have core advanced mathematics modules.

> *I have considered it going into doing an economics degree, but for that I'd need more maths and it's not one of my strong subjects. (School 5)*

I feel like a lot of economics, A-level.. not A level economics, at university, is maths. […] And I don't like just want to do a maths degree. (School 5) ”

We also polled the girls on what topics they thought it was important to study in economics. There is some disconnect between the topics that they think should be studied (inequality and poverty ranked highest), compared to those that they think economics is about (money, monetary policy and banks). The relatively low importance attached to environment may reflect that this is not a topic they think economics concerns itself with, rather a low importance attached to this topic.

When informed that these are all topics covered in economics curricula, girls showed interest and curiosity. This pattern was consistent across schools and discussions, suggesting that girls have limited information about what studying economics actually entails. Nevertheless, they appear convinced that they cannot study what interests them in economics departments, and need to look to other, albeit related, departments: business, marketing, geography, land economy are some of the ones named in the discussion.[6]

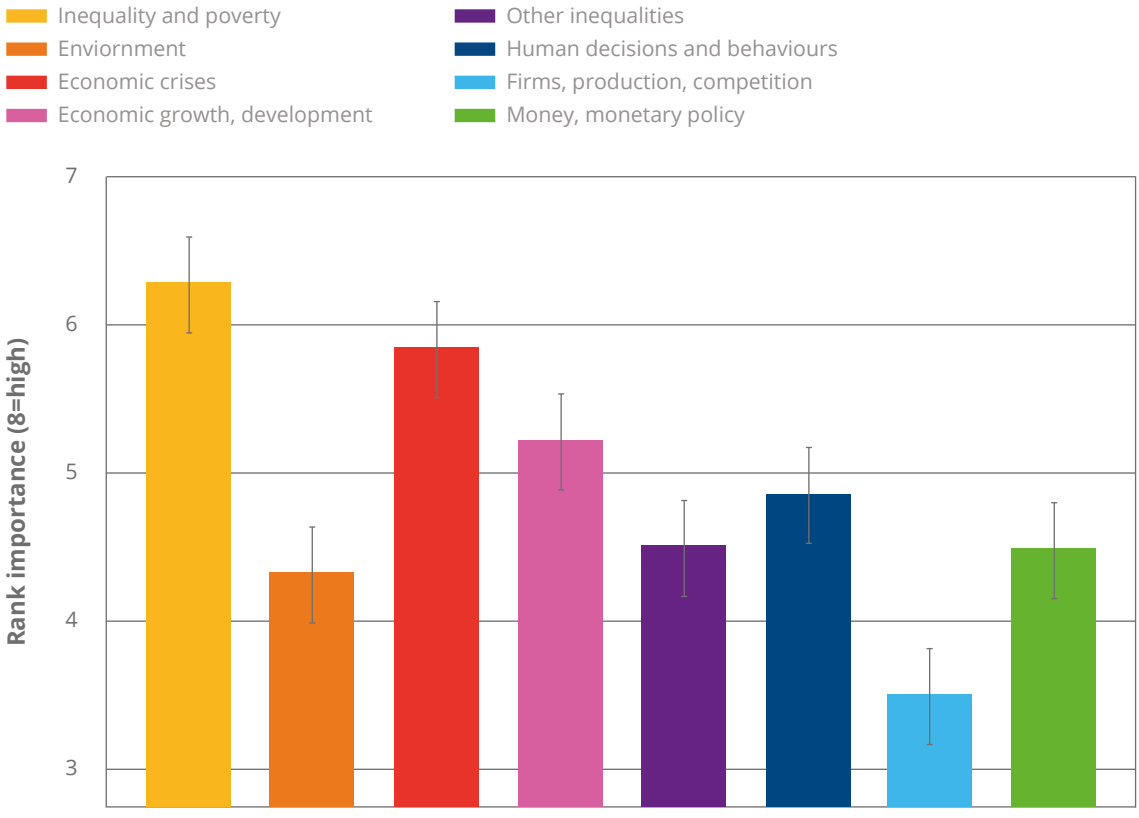
“ *I mean yeah, because generally I associate economics with like money and maths. So like, I didn't think the environment or like inequality would have anything to do with it necessarily. (School 1)* ”

The (gender) identity of economics students and economists

We explored whether gender plays a role in girls' decisions to study economics in several ways. We sought to understand whether girls perceive economists as possessing male-coded characteristics and behaviours and whether the prospect of being one of the only girls in a class is unappealing.

6 When asked if participants knew someone studying economics at university, some referred to a popular TikToker who began studying economics at Cambridge, only to switch programmes when she realised an economics degree is very different to A-level economics, which she says enjoyed a lot.

Figure 5. What do you think is important to study in economics?



> *The girls describe a stereotypical economics student as highly intelligent, strongly opinionated, and competitive. Many do not see themselves as "smart enough" and worry (often subconsciously) that they will not fit in socially with other economics students.*
>
> *[T]here's a stereotype around economics students that they're very clever. So I guess that would be a bit. It's like unless you're in their field of intelligence. (School 1)*
>
> *[W]e would assume them to be like men or like, yeah obviously like guys. (School 1) [emphasis added]*
>
> *[…] they would kind of act as if they knew everything or they were always right.*
>
> *[Is that because they are men or is that because they're economists?]*
>
> *Well, I would say both (School 5)*

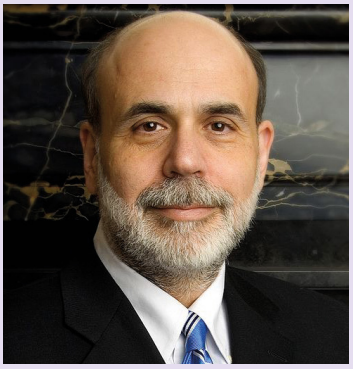
Despite insisting that *"you can make friends with anyone" (School 1)*, they overwhelmingly imagine a typical economics student as male – and a particular type of male, which they characterises as *"competitive" (School 4)*, obnoxious and a "know-it-all".

> *There's there is a lot of stereotypes around economic students like you hear a lot about them. But me, generally, I don't think I would find I could be friends with them (School 1)*

None of the girls explicitly stated that their decision not to study economics is influenced by the gender imbalance in the discipline. Yet, they all seemed to be aware of this imbalance, noticing it already in their school classrooms.

> *I think […] two of the classes, there's about 5 girls and then one class with four girls. So and obviously the rest [15] are guys. (School 5)*
>
> *[T] here was still a bit of a split of boys and girls taking economics I think, for our year, there was maybe more boys taking it. […] I think it's like similar for A level now because there's not that many girls in our class. I think there's about four.*

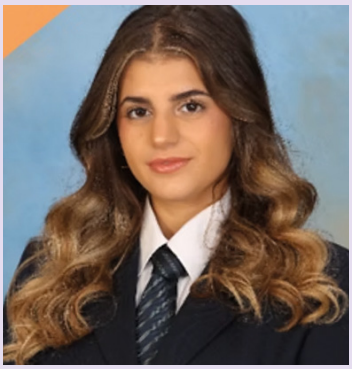
Which of the people pictured is an economist? (results)



Which of the people pictured would you feel comfortable approaching? (results)

Which of the people pictured would you say helps others? (results)

Which of the people pictured would you say is a professional? (results)



Which of the people pictured do you think is successful in their career? (results)

Yeah, that's true for our class as well. (School 4) ”

Few girls have personal connections with economics graduates, apart from their economics teacher at school. Even when they reported that indeed they know someone, they mention relatives who studied finance, accounting or business – fields that they viewed negatively.

“ *I'm not really too sure on all the things that you can do in the economics degree, but from like things that you see like depicted in like in the news and also like I guess like films and other forms of media (School 5)*

[M]y dad studied something similar, something business-related.. my whole family are accountants (School 6)

[M]y dad is in stock trading, most of my family is investment bankers […] It [economics] is off-putting because you know they're always stressed, cause their income basically depends on the stock market (School 6) ”

Finally, we conducted a role model exercise, where girls were asked to identify economists from a set of people (all of whom were, in fact, economists) as well as to attribute characteristics such as “friendly” and “successful” to individuals in the group.

Career choices

In our conversation about potential future careers, it was often unclear whether girls were referring to their choice of university subject or their intended careers. Their intended university degree choices are summarised in Figure 6 below.

Many girls are undecided, even those already studying for their A-levels, and select courses that keep their options open.

“ *I'm not really sure what I want to study, but I do know that our.. my A levels like not to restrict me on what I want to do. So I'm going to choose a wide variety of things and then hopefully by then I know what I wanna do. (School 4)*

I'll definitely wanna go to university and probably […] Newcastle but I don't know what I want to study, but I think like sort of going to do like business or like finance just because it's like a really interesting like topic. (School 4)

Figure 6: Intended university degree choices

I think I'm choosing either economics or biology, then I'll probably choose it depending on which subject. Which one I find interesting. throughout the year, or probably like my grades. (School 5)

Honestly, I'm not really sure. I think it's […] I'm very passionate about it and so I just want to learn as much as I can and then kind of go from there (School 5) ❞

When asked about the factors influencing their choice of university degrees, girls mention careers as vocations – doctors, psychologists who help others – or subjects they find interesting, such as archaeology and biochemistry. Some girls seem aware of market demand for specific professions, especially those in technology. Others aim to play to their strengths, selecting degrees that align with skills they believe they possess.

❝ *And I wanna go [to LSE] for either economics or finance. [Why is that?] So I feel like my skills are probably rooted in more like mathematical, like a mathematical side of kind of life. So I don't really want to do a purely maths degree, so it's it sort of feels like the natural like next choice for me personally. (School 4)*

I want to study medicine because I do want to have a job that gives me purpose, which I could do through caring for people […] But I do really enjoy science at the same time. So I want something that has both of them (School 4) ❞

Future earnings did not feature prominently in the discussion. When prompted, girls admit that they want a profession that allows them to live comfortably, but they do not view higher salaries as worth pursuing a profession they are not interested in. Still, they acknowledge that an economics degree could lead to higher earnings, even if this is not their primary motivation. Their understanding of what makes a career "interesting" remained somewhat vague.

❝ *Yeah, I don't know. It just seems like nice to like help like treat patients and like, make everyone like happier in a sense like because. Like I don't know, it just seems like it's right (School 4)*

The pay [for people with economics degrees] does vary higher, so it might make me change my mind if I do want to go into it, but for now I don't think the pay really matters. (School 1)

In terms of earnings I also think that I probably, depending on like the branches of it, it probably would earn quite well, but that's not influenced my reason or anything. (School 3) ❞

Working conditions appear to be a bigger concern. Girls are particularly averse to careers that would lead them to what they called "9-5 office jobs". They aspire to careers that offer flexibility or the opportunity to travel, believing that degrees such as psychology or foreign languages would better support these goals. At the same time, they value stability – not necessarily in the sense of staying in one job long-term, but rather in securing employment easily. They do not associate these qualities with careers in economics, which they primarily link to higher salaries.

❝ *I initially found it appealing because like I remember loads of people saying if you go in economics, you're going to have like the best paid job and stuff. (School 4)*

I wanted to go in medicine as well because I think it's like I'm all about having stability and like of like incomes coming all the time and like I can move anywhere in the world and still be able to do that (School 4)

that's why I pretty much choose medicine as well because like, the job still be like stable in future (School 4)

I just think it's quite like a growing industry. So I feel like it can be quite easy to find like a future career in that, like no matter what I want to do, I think it'll be quite easy to find a job. (School 5)

I'm not really sure what I want to get into, but I do know that I want a job that doesn't have like specific time restrictions like a nine to five or something like that because I really value like well, the freedom of being able to like, do things whenever I want and having that kind of freedom. (School 4)

I've got a little bit of a fear of kind of being stuck in like an office cubicle or say like a 50 hour work week and never being able to kind of leave that office. And I think

the income would also be a bit of a factor because I feel like probably from being from the North East of a bit a deprived area, I think you kind of see the impact that that can have on sort of day-to-day lives, I think. Income and like the ability to travel would be quite important for me. (School 4) ”

Some girls had the opportunity to complete work placements during the summer, and we strongly recommend this as a practice. Many reported changing their minds about degrees they had previously been set on after experiencing the reality of working in that field. For others, it reinforced their dislike of office jobs and led them to explore alternative career paths.

“ *we've just done work experience. So I've had that experience of being like get in the office like multiple days of the week and I just found it really boring (School 4)*

I wanted to do medicine but then I did work experience and … I discovered I'm not a people-person! Now I'm thinking of neuroscience or microbiology or biochemistry (School 6) ”

Girls generally categorise careers with an economics degree as “9-5 office jobs”, frequently mentioning professions such as accountant, stock trader, entrepreneur, and banker. As above, their views appear to be shaped largely by media stereotypes than personal experience, as few had been exposed to economists in real life. Interestingly, “economics teacher” was not mentioned by the girls as a career one can have with an economics degree, until explicitly asked by the researchers. Many admitted they are unsure about what one could do with an economics degree, describing career prospects as both too limited and too broad at the same time. Nonetheless, they are interested in learning more about potential careers in economics.

“ *I think with economics, I don't know, the jobs feel more uncertain in some areas compared to law. (School 5)*

I'm not like too sure about like careers in economics. But I feel like they'd be like a bit more like restrictive than if you took a maths degree by itself or like a science degree or something. (School 4)

I think with an economics degree, I feel like sometimes I think it gives too many options for me personally. So I'm like looking at university open days. They give you like a few different modules you can study like within the years. I think sometimes it scares me a little bit because it allows me to sort of have too wide career options (School 4)

With an economics degree, I think like there's a wide range of jobs. Actually, I don't think it is very like restrictive because I think it is like looked highly upon (School 4) ”

“

Their views appear to be shaped largely by media stereotypes than personal experience, as few had been exposed to economists in real life

”

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