

SFI Science in Ireland Barometer' 2020

Research Report (Phase I)



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Executive Summary

This report presents findings from survey research on national science attitudes conducted by Qualia Analytics on behalf of Science Foundation Ireland (SFI) in 2020. Here, we provide a summary of key findings about the Irish population and their attitudes towards science. All values and graphics represent results that have been weighted to be representative of the population¹.

Overall, public attitudes toward science and scientists were extremely positive.

- An overwhelming majority of people expressed that they found science *useful* (95%), *important* (94%), *beneficial* (94%) and *essential* (94%).
- Slightly lower but still considerable majorities also found science *inspiring* (89%), *stimulating* (85%), and *fascinating* (89%).
- However, the strength of positive sentiment towards scientists was not quite as extreme as positive sentiment towards science itself.

Irish trust in science was strong, with results largely reflecting longstanding trends of trust in science research across Europe and in other small, advanced economies.

- Strong majorities of the Irish public reported trusting both ‘science’ (89%) and ‘scientists’ (81%). The public had the strongest level of trust in ‘medical health professionals’ (87%) and ‘scientists’ (84%), compared to other Irish professionals - a finding in line with trends found in other small, advanced economies².
- The public expressed the highest level of trust for scientific institutions to ‘create useful knowledge’ (79% on average).

- While relatively few expressed distrust in ‘scientists’ overall, there was greater distrust expressed by people in Dublin (25%) than in other parts of the country (2%)³.
- Greater distrust was also expressed towards private scientific institutions compared to public scientific institutions (10% higher distrust on average). This trend was also found across other small, advanced economies.
- Strong value for science amongst the Irish population was also observed within personal perceptions of science.
- Science was largely seen as valuable on a personal level; three-quarters (75%) of people in Ireland thought that ‘science is useful in solving everyday problems in [their] lives’ and even more agreed (91%) that ‘learning science changes [their] ideas about how the world works’.
- However, only just over half (53%) of the population agreed that ‘with hard work, anyone can be a scientist’.
- People with lower levels of education were less likely to see a ‘relationship between their real-world experiences and science’⁴.

This research also found varied results with regards to the public’s self-reported level of understanding and capability to do science.

- More than three-quarters (79%) of the Irish public said that they ‘feel capable of understanding science’.
- However, a smaller proportion of people felt ‘generally well informed about science’ (56%).
- When compared to 2018 data, positivity around feeling informed about science has increased (+18%).
- While 40% of people felt they would be capable of ‘being a scientist’ (40%), this dimension of the public’s views of science was the least positive, with 32% disagreement.

1 Further information on weighting techniques can be found in section 8.2.3.

2 Countries used for comparison were Denmark, Sweden, Finland, Israel, Singapore, and the UK.

3 $\chi^2(4) = 159.880, p < .001, V = .40$

4 $r_s = -.31, p < .001$

- While still only found in a minority of people, older generations^{5,6} and those with lower levels of education^{7,8} had lower levels of confidence in personal capabilities to do and understand science.

Significant support for public investment in science and the role of science in guiding public policy was evident.

- There was high public confidence in the role of science in policy-making contexts: 79% of people agreed that ‘scientific evidence should guide public policy’.
- The Irish public saw science as something well worth spending public money on (80%), with a considerable proportion of people having expressed support for spending more money on scientific research in the future (75%).

Several noteworthy findings were found in terms of the Irish public’s perception of how science interacts with society.

- The Irish public were confident about science’s positive impact on society, with 84% agreement that ‘science is making the world a better place’.
- The majority of the Irish public agreed that ‘scientists have a professional responsibility to talk about research findings with the public’ (85%), but a smaller proportion agreed that ‘the general public should have a say in how science develops’ (43%).
- Agreement with the statement ‘the general public should have a say in how science develops’ was far more common amongst people from Other Ethnic Groups (79%) compared to White Ethnic Groups (40%)⁹.
- Women were slightly more likely than men to agree that ‘we need more gender diversity in science’¹⁰.

- The Irish population have, on average, become more certain about the positive impact of science in ‘ordinary people’s’ lives since 2018 (+16%).

With regards to interest in science, this research found no conclusive trends in the frequencies at which people reported following science news.

- The majority of the Irish public (69%) reported following ‘news in general’ on a daily basis. However, we found a high level of variation and no conclusive trend in the frequency of people following ‘science news’ specifically, with a median response of once per week.
- Popular news types included ‘government and politics’ and ‘health news’ with 53% and 52% having reported following them *daily*, respectively.
- Men were found to follow ‘technology news’ more frequently than women.¹¹

5 $r_s = -.34, r_s = < .001$

6 $r_s = -.31, p < .001$

7 $r_s = .3, p < .001$

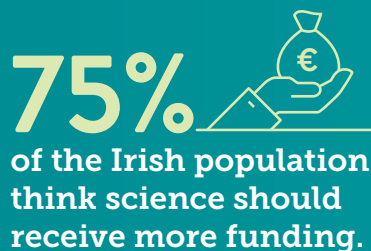
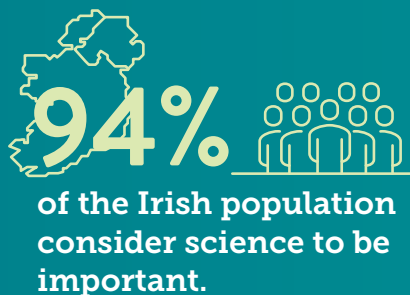
8 $r_s = .32, p < .001$

9 $\chi^2(4) = 184.522, p < .001, V = .45$

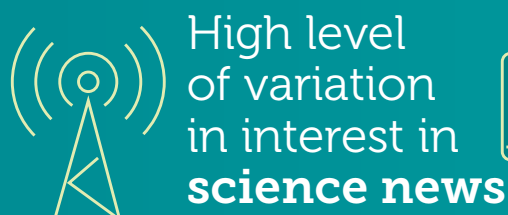
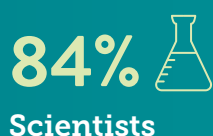
10 $U = 19011.5, p < .001, r = -.2, \eta^2 = .04$

11 $U = 152093.5, p < .001, r = -.36, \eta^2 = .13$. At a moderate effect size, 13% of the variability in the frequency of following technology news can be explained by gender.

Key Findings



Most trusted Irish entities



79%

feel capable of understanding science, but just

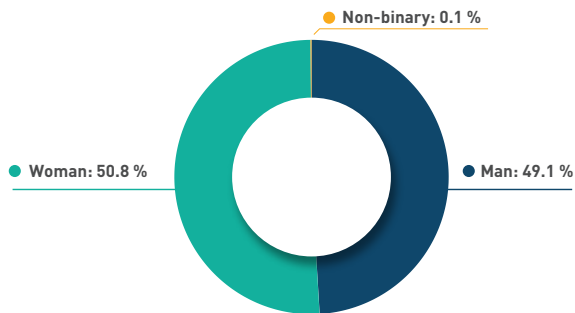


40%

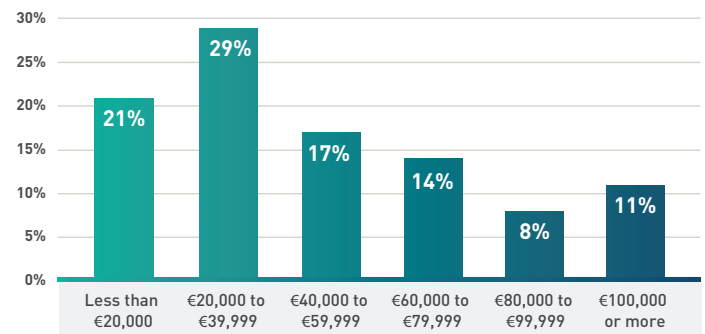
identify as the type of person who could be a scientist



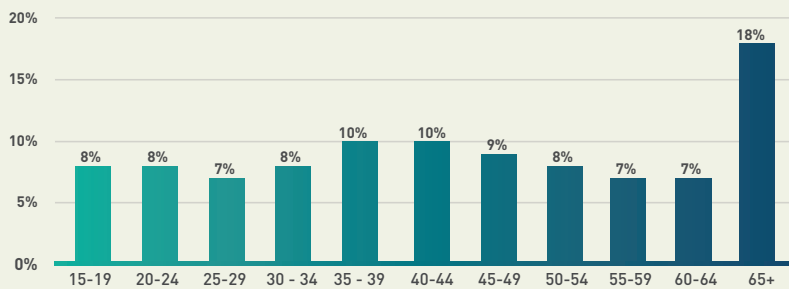
Gender distribution of respondents -
“What is your gender?”



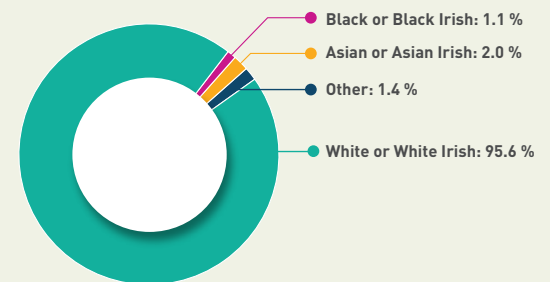
Distribution of respondents across household income -
“What is your total gross annual household income?”



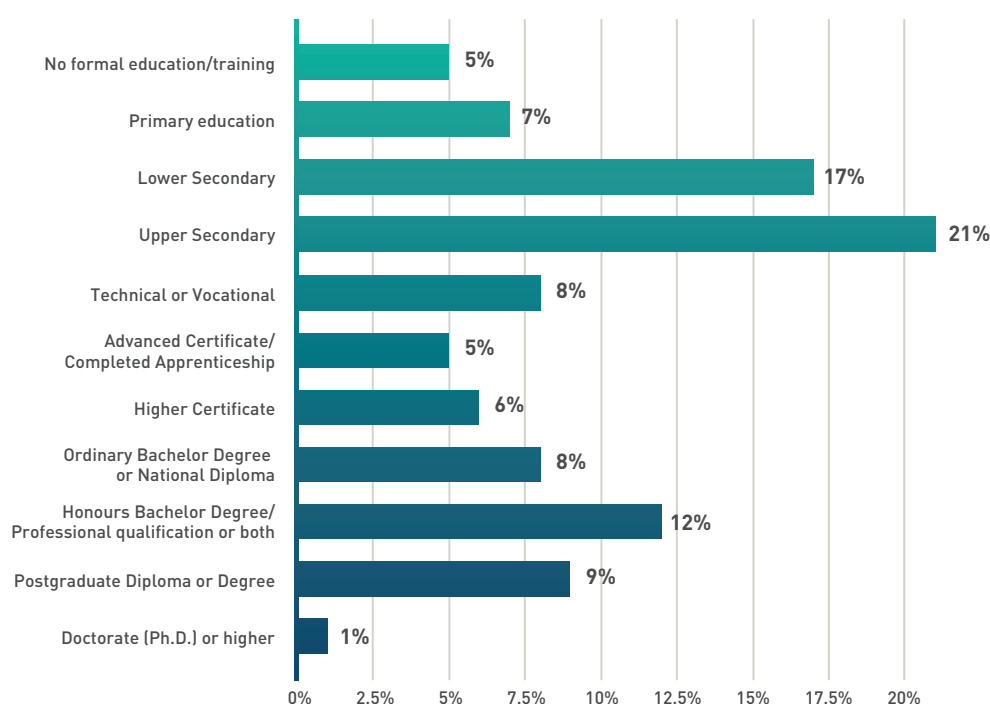
Age distribution of respondents - “When were you born?”



Distribution of respondents across ethnic and cultural background - “What is your ethnic or cultural background?”



Distribution of respondents across the highest level of education or training completed - “What is the highest level of education or training you have completed so far?”





1 | Introduction

In 2019, Science Foundation Ireland (SFI) commissioned Qualia Analytics to run the 2020 wave of its public science attitudes survey, the SFI Science in Ireland Barometer. As SFI, and the science community in Ireland more broadly, face many layers of decision-making in facilitating the progression of scientific research in Ireland, it is essential for them to understand the views of the people that they seek to benefit with this work: the Irish public. When conducted to high social scientific standards, survey research is the ideal tool to gather important representative insights and enable the Irish scientific community to keep its finger on the pulse of the dynamics underlying the Irish public's engagement with science. The Barometer also offers SFI the opportunity to assess progress on its goal to have the most engaged and scientifically-informed public globally - a key objective within SFI's Agenda 2020 strategy.

To address these needs, we ran a survey for two months, from 13th July to 13th September 2020, across a geographically diverse, representative sample of the Irish public, yielding both quantitative and qualitative data for analysis¹². This survey covers a range of topics designed to help SFI and the scientific community to monitor the landscape of public attitudes about science. The findings presented in this report offer robust evidence about where Ireland stands in terms of the public's relationship with science¹³.

¹² Final sample of 1018 respondents.

¹³ NOTE: All results from the research presented in this report are weighted to accurately represent the Irish population. However, it should be noted from the outset that a large proportion of these results represent the views of White respondents (95.6%) (see section 9.3.3 for a full breakdown). Equally important to consider is the fact that these results could not include the views of non-binary respondents, as they could not be accurately weighted to be representative of the population (see section 9.3.1 for details regarding why). Further information on weighting techniques can be found in section 9.2.3.

1.1 | Research Objectives

The SFI Science in Ireland Barometer 2020 was designed and implemented with the objective to reveal the engagement, level of understanding and views and experiences of a representative sample of the Irish population regarding science and scientific topics. The overarching research question driving this project is:

'Who values science in Ireland and why?'

In order to answer this question, we first collected data on how the public relates to scientific information, for example, self-reported¹⁴ levels of understanding, knowledge and ability to do science, and levels of scientific education amongst the public. The second key category we addressed included beliefs about science, including perceptions about how interesting and important it is, in addition to experiential and instrumental attitudes about science. The final thematic area covered attitudes towards specific scientific issues, and trust levels towards the scientific community - for example, investigating attitudes about privately and publicly funded scientific institutions, scientific information sources and scientific funding.

Data on these topics contribute to the following project objectives:

- Provide insight on how SFI, and the broader science community, should adapt and optimise relevant, impactful tactics to engage, create and support informed citizen dialogue with STEM;
- Help researchers take account of the social and cultural context and impact of their work;
- Identify public perceptions of the role of STEM and SFI in Ireland's future economic development;
- Provide an evidence base for science advocacy;
- Inspire academics to further investigate society's relationship with science.

Finally, it is important to acknowledge the significant likelihood that the attitudes towards science found in this research may have been affected by the COVID-19 pandemic. In order to uncover such effects, this project follows a 'repeated measures' research design, where we repeat the same survey with the same respondents in 2021. This will enable the identification of some of the pandemic's effects on public attitudes and engagement with science. Results are likely to reveal the within-individual range of attitudes about science across highly distinct social, public health and media contexts by asking the same questions about trust, interest and importance of science at an early, acute crisis point in 2020 and a (hopefully) late-stage point in the pandemic in 2021. Conducting this follow-up, longitudinal research will enable exploration of the question

'How stable or variable is support/value for science in Ireland?'

¹⁴ Scientific literacy was not directly measured. Instead, respondents self-reported their level of knowledge. This is because self-report items are the best indicators available to gain a perspective on the public's understanding or knowledge of science, as there is no consensus in science survey literature with regards to a well validated, and sufficiently short 'science knowledge' index. Further, as the Wellcome Global Monitor (WGM) 2018 notes, while self-report is an imperfect measure and not always reliable, it is arguably more illuminating than any objective science literacy test would be, as people tend to form attitudes based on their self-perception of science knowledge, rather than what they actually know. The WGM 2018 also notes that "self-assessed knowledge [...]" and what they actually know [...] are sometimes correlated fairly well" (p.26). Available at: <https://wellcome.org/reports/wellcome-global-monitor/2018>



2 | Results

The quotations presented in dark blue quotation boxes show what different people said in response to:

When you think SCIENCE, what are the first things that come to mind?

2.1 | Attitudes Towards Science

Section Summary

Here, findings on the Irish public's overall attitudes about science are presented. People were asked to mark a scale between pairs of opposing adjectives to indicate their views about science and scientists, for example, marking a 7-point scale between *useless* - *useful* or *dishonest* - *honest*. Importantly, the terms 'science' and 'scientist' were not imposed or defined. This means respondents were left to use their own understandings of these concepts when responding to the survey questions, so that answers would reveal pre-existing, everyday attitudes about what people interpret 'science' and 'scientists' to mean, rather than newly developed ones based on a specific definition.

Key findings

- Public attitudes toward science and scientists were extremely positive - an overwhelming majority of people expressed that they find science *useful* (95%), *important* (93%), *beneficial* (93%) and *essential* (94%).
- Slightly lower but still considerable majorities also found science *inspiring* (88%), *stimulating* (85%), and *fascinating* (89%).
- The strength of positive sentiment towards scientists was not quite as extreme as the positive sentiment towards science itself.



94%

of the Irish population consider science to be important.

When you think of SCIENCE, what are the first things that come to mind?



When I think of science, the first things that come to mind is how exciting science is. Science is a continuously progressing subject, where you strive to discover more and more. It is infinite, broad and exciting!

Woman, 16, Dublin

2.1.1 | Attitudes Towards Science

Results show very positive attitudes about science in general. The vast majority of people felt that science is *useful* (95%), *essential* (94%) and *important* (94%) compared to only 1% who viewed it as *useless*, 2% as unnecessary, and 3% as *unimportant*. Indeed, *unimportant* - *important* was the scale with the highest proportion of strongly positive responses, with 82% selecting the highest level of importance. The *uninteresting* - *interesting* scale was the item with the largest proportion of responses on the negative end – in this case, *uninteresting*, with 9% of responses, though this is still a very low proportion. The scale with the lowest proportion of strongly positive views towards science was *dishonest* - *honest*, with only 50% viewing science as *honest* to the highest extent. This highlights trust in science as an area with underlying dynamics warranting further attention (see section 2.2).

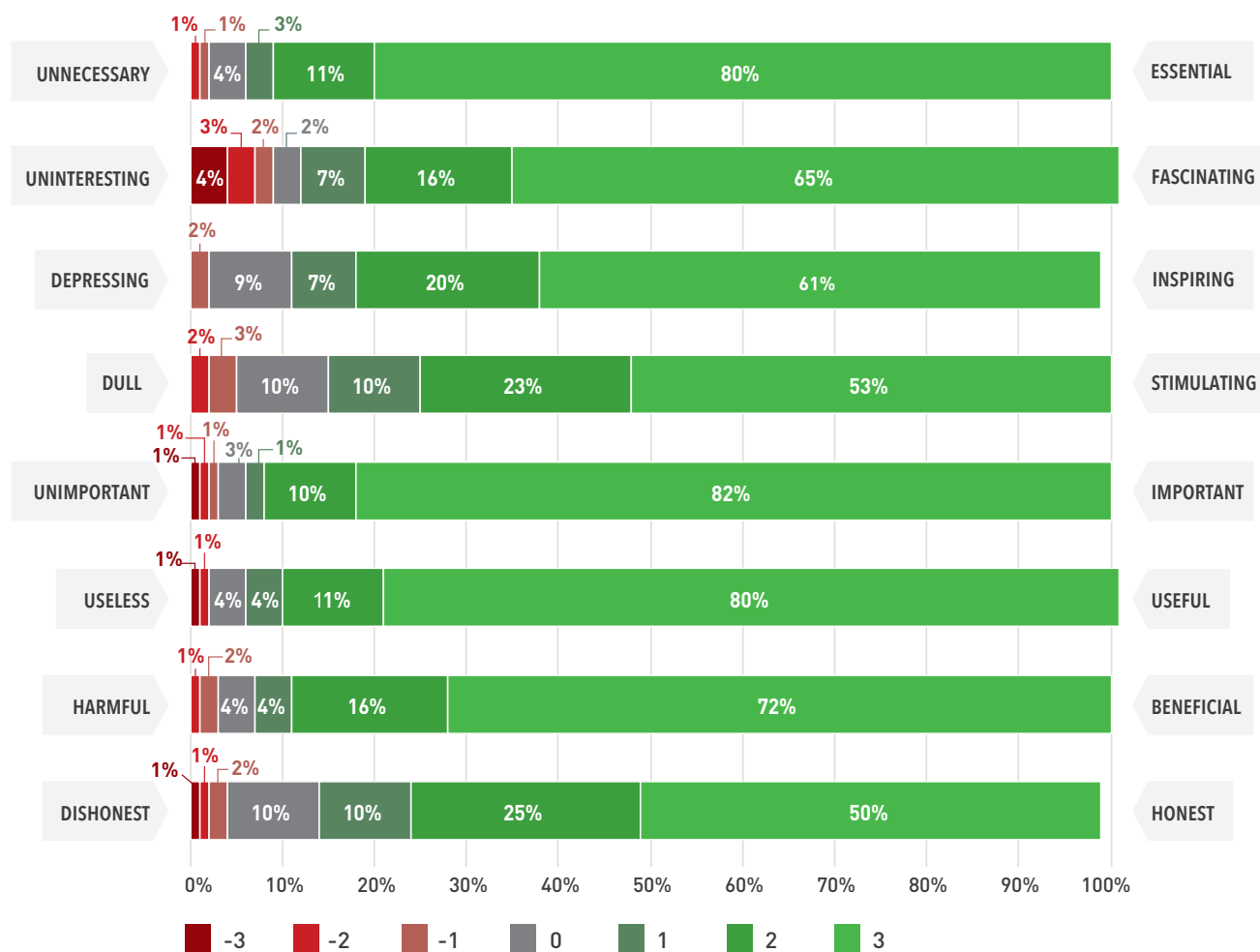


Figure 1.

Attitudes Towards Science. -3 = most negative response and +3 = the most positive response above - "I think SCIENCE is..."¹⁵

When you think of SCIENCE, what are the first things that come to mind?



Research Scientists, quality assurance scientists, and medical scientists.

Woman, 22, Galway

¹⁵ Margin of error: $\pm 3\%$

n (top to bottom): 949, 942, 929, 916, 927, 920, 939, 909

2.1.2 | Attitudes Towards Scientists

Below, it can be observed that scientists are generally regarded positively by the Irish population. In terms of the cognitive scales such as *unimportant - important*, *useless - useful*, and *harmful - beneficial*, results were generally similarly positive between scientists and science. However, the strength of positive sentiment towards scientists was not quite as extreme as the positive sentiment towards science itself. Additionally, the results showed a slight skew towards negative affective response options such as *uninteresting* (6%), and *dull* (5%). Similarly to attitudes towards science, the measure with the lowest proportion of strongly positive responses about science was *dishonest - honest* (35%).

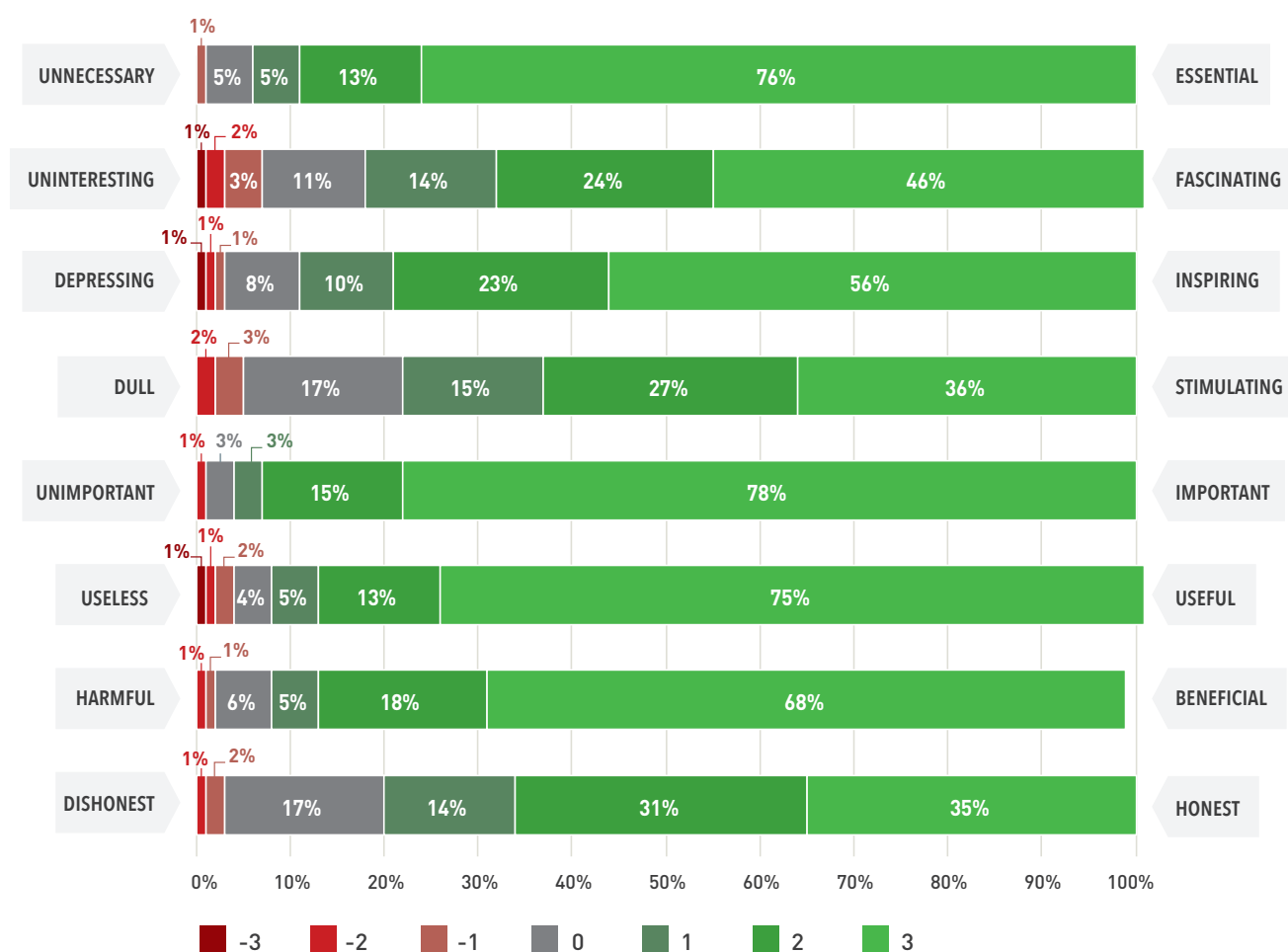


Figure 2.

Attitudes towards scientists. -3 = most negative response and +3 = the most positive response above - "I think SCIENTISTS are..."¹⁶

2.1.3 | Demographic Trends in Attitudes Towards Science

In addition to the above results, we ran statistical tests to explore whether there were any noteworthy¹⁷ differences in attitudes towards science between different demographic groups. However, we identified no major differences or trends on the basis of gender, age, income, location, education or ethnicity for the questions within this section.

¹⁶ Margin of error: $\pm 3\%$
 n (top to bottom): 954, 918, 948, 900, 952, 908, 925, 889

¹⁷ Throughout this report, the term 'noteworthy' refers to any statistically significant results with an effect size r equal to or above 0.3 (at least moderate).

2.2 | Trust in Science and Scientists

Section Summary

This section expands on the results from the honesty measure highlighted in section 2.1.1 and explores in detail the levels of trust that the Irish public have in science, the scientific community in Ireland and beyond. Importantly, these results are divided into views about publicly- and privately-funded scientists. Trust levels in scientists are also compared with trust levels in other professions to gain a socially contextualised understanding of public trust in science.

Key findings

- Strong majorities of the Irish public reported trusting both ‘science’ (89%) and ‘scientists’ (81%). The public had the strongest level of trust in ‘medical health professionals’ (87%) and ‘scientists’ (84%) compared to other Irish professionals.
- While relatively few expressed distrust in ‘scientists’ overall, there was greater distrust expressed by people in Dublin (25%) than in other parts of the country (2%)¹⁸.
- The public expressed the highest level of trust for scientific institutions to ‘create useful knowledge’ (78% on average).
- Greater distrust was also expressed towards private scientific institutions compared to public scientific institutions (10% higher distrust on average).
- Comparing this data with international findings shows that Ireland is generally performing well in terms of public trust in science. Areas of distrust (in private scientific institutions and in scientific institutions to be ‘open and honest about their funding’) are reflected internationally, rather than being issues specific to Ireland.

When you think of SCIENCE, what are the first things that come to mind?



Science [...] should always be self correcting over time due to rigorous checks and new information becoming available. [...] A vital resource against misinformation and unfounded conspiracies

Man, 29, Athlone

18 $\chi^2(4) = 159.880, p < .001, V = .40$

2.2.1 | General Trust in Science and Scientists

Figure 3 shows that overall, the majority of the Irish population trusted 'science' (89%) and 'scientists' (81%), at least to a partial extent. However, as identified in the previous section, there was a notable difference (+25%) in the proportion of the population who *completely trust* 'science' compared to 'scientists'.

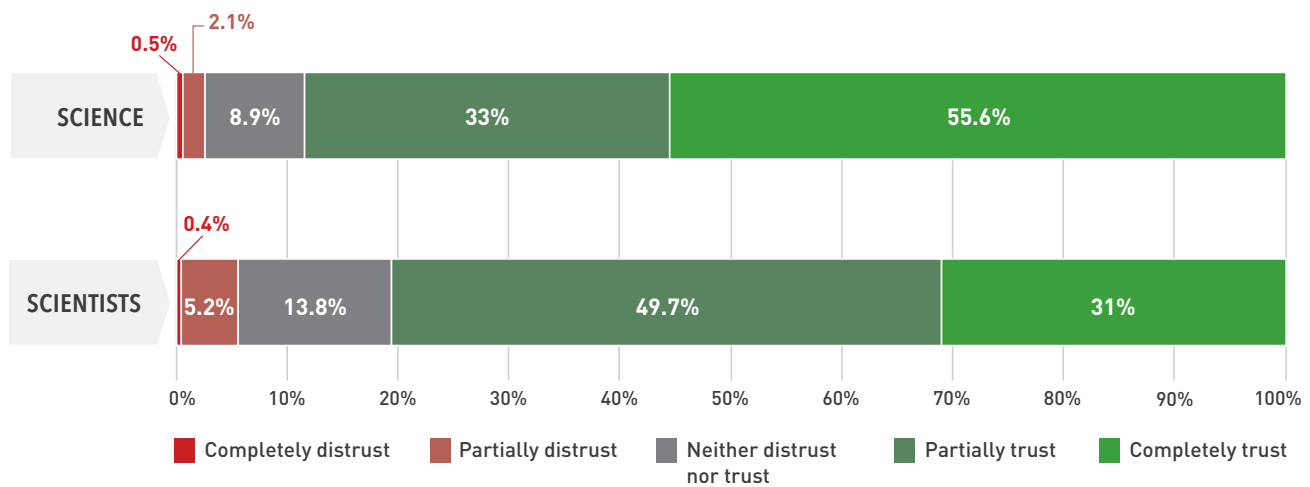



Figure 3.

General trust in science and scientists - "In general, would you say you distrust or trust the following?"¹⁹.

Most trusted Irish entities



87% 
Medical health professionals

84% 
Scientists

79% 
Public health experts

¹⁹ Margin of error: $\pm 3\%$
 n (top to bottom): 979, 992

2.2.2 | Trust in Irish Professionals

A standard type of question in science attitudes surveys is to track how attitudes about scientists compare to other professions, including those in related fields such as medicine, as well as politics and journalism. When contextualised against the wider range of Irish professionals, ‘scientists’ and other science professionals (‘public health experts’ and ‘medical health professionals’) performed extremely well in terms of trustworthiness as perceived by the Irish population. As has been found by many prior international surveys of public attitudes, ‘scientists’ and ‘medical health professionals’ were perceived as the most trustworthy professionals. In this survey, we found roughly equal overall levels of trust between ‘scientists’ and ‘medical health professionals’, though ‘medical health professionals’ were *completely trusted* at a somewhat higher level (44% compared to 37% for scientists). At the other end of the trust spectrum, ‘politicians’, ‘journalists’, and ‘the government’ were notably distrusted by the public (57%, 40% and 41% respectively). The only professionals with a median other than *neutral* or *partially trust* were ‘politicians’, for which the median was *partially distrust*.

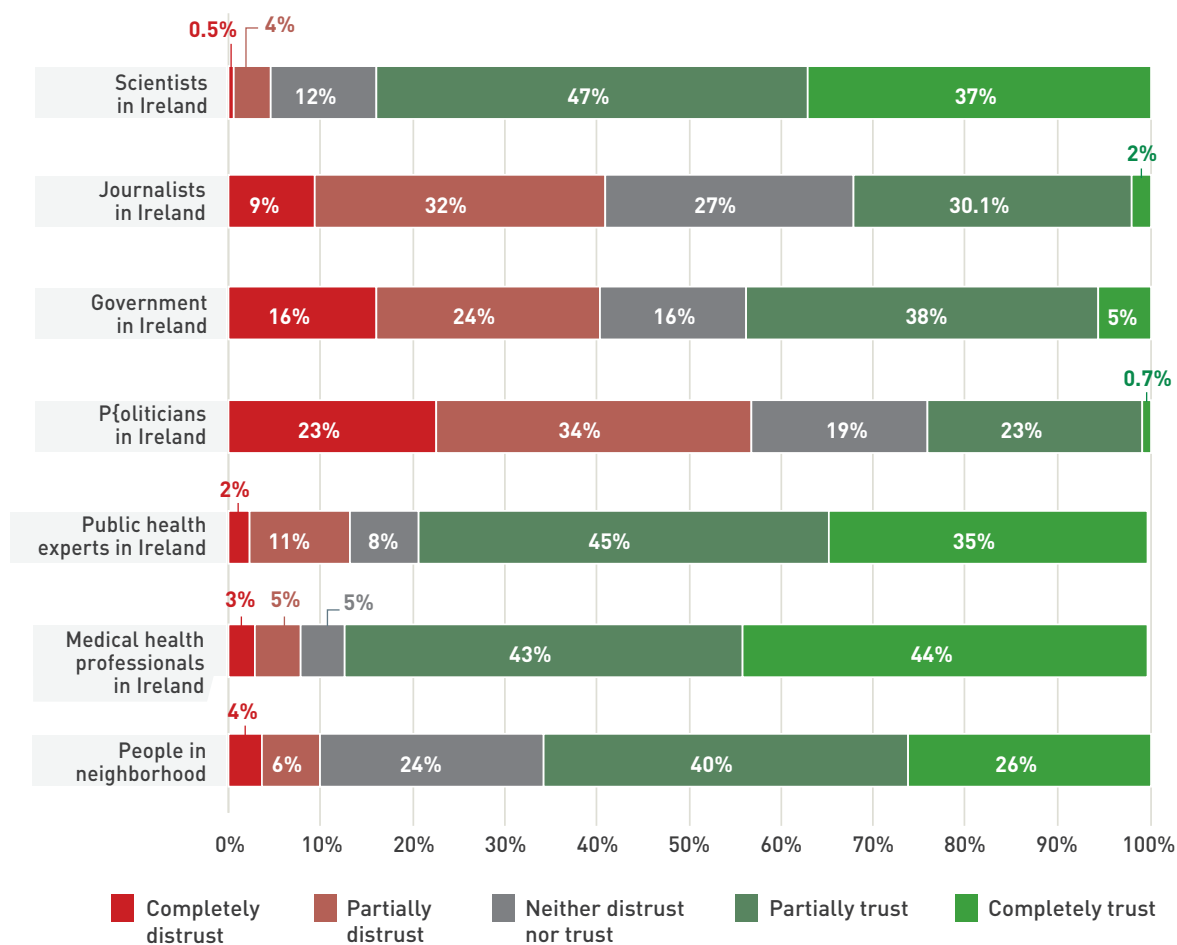


Figure 4.

Trust in different Irish professionals, including scientists - “How much, in general, do you distrust or trust each of the following?”²⁰.

²⁰ Margin of error: $\pm 3\%$

n (top to bottom): 978, 961, 971, 994, 1000, 993, 987

2.2.3 | Trust in Public and Private Scientific Institutions

Figure 5 shows the Irish population's level of trust in publicly-funded scientific institutions to fulfil certain expectations relating to responsibility, transparency and accountability. These results show generally positive perceptions, notably higher for variables relating to the socially responsible purpose of science, such as 'creating useful knowledge' (83%) and 'working with the intention to benefit the public' (77%). Openness and honesty about funding was the area where there is both the smallest proportion of *complete trust* (19%) and higher levels of overall distrust (18%).

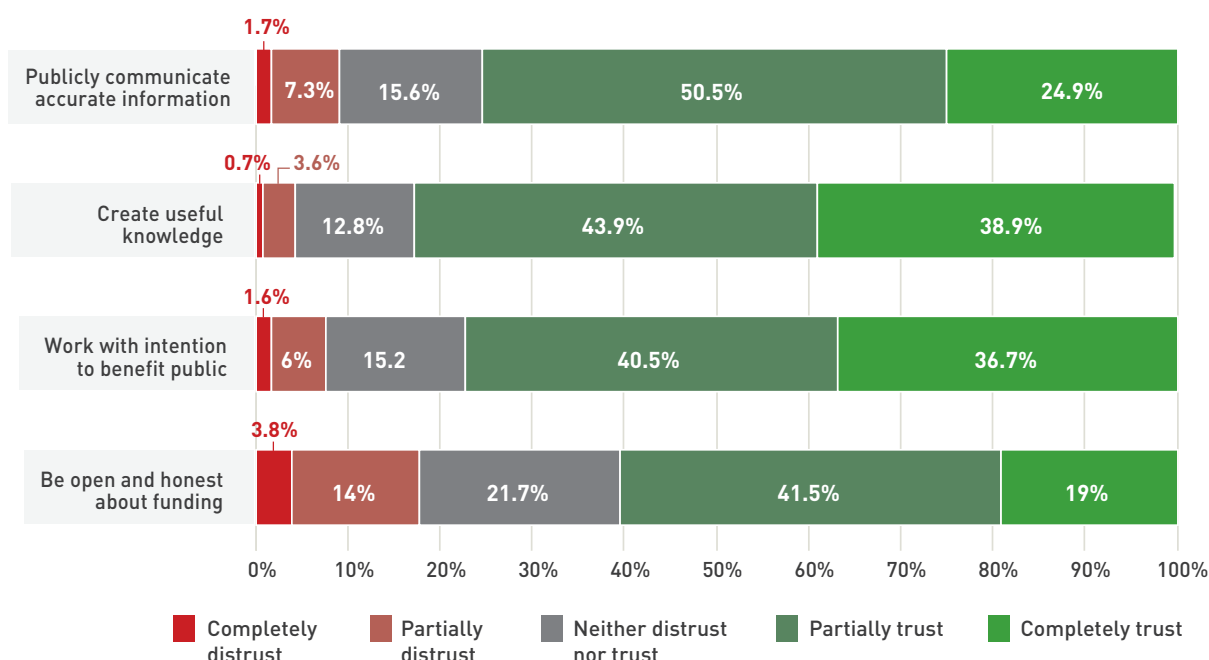


Figure 5.

Trust in public scientific institutions to fulfil certain expectations - "How much do you distrust or trust scientists at publicly funded institutions in Ireland (such as universities) to:"²¹.

When you think of SCIENCE, what are the first things that come to mind?

Where would we be without science... to help us in so many ways and to help the planet. [...] I'm very much enjoying the exposure the scientists are receiving on the coronavirus – on our airwaves, whoever thought...

Woman, 65, Kildare

²¹ Margin of error: $\pm 3\%$
 n (top to bottom): 969, 970, 977, 940

The above results about public scientific institutions can be compared with trust levels in private scientific institutions to fulfil the same expectations. Across all dimensions, trust in private institutions was lower than in public institutions - on average, the level of distrust in private institutions was 20% higher than distrust in public scientific institutions. Again, the practice of doing science for a social or useful purpose - 'creating useful knowledge' - was the aspect in which private institutions were perceived as most trustworthy (73%). This is in contrast to the trust held in privately-funded scientific institutions to be 'open and honest about funding' (49% overall trust).

When you think of SCIENCE, what are the first things that come to mind?

“Unfortunate that it's motivated mostly by companies for financial gain or universities for capital funding

Man, 27, Galway

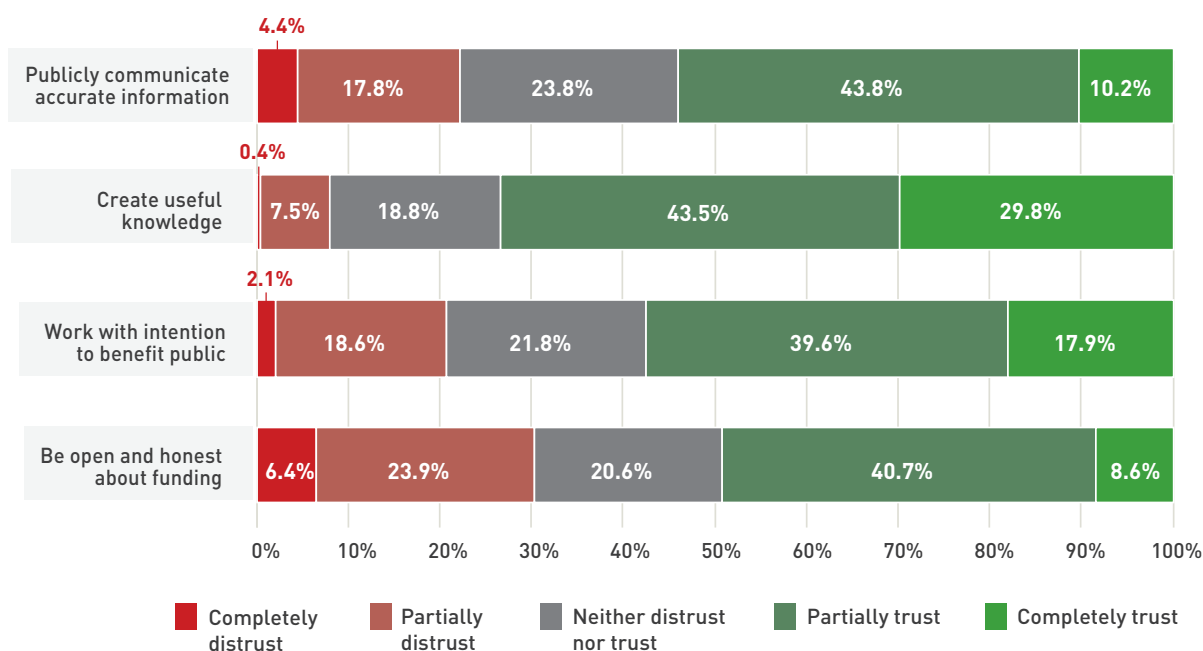


Figure 6.

Trust in private scientific institutions to fulfil certain expectations - “How much do you distrust or trust scientists at private institutions in Ireland (such as companies) to:”²².

²² Margin of error: $\pm 3\%$
 n (top to bottom): 942, 957, 941, 911

2.2.4 | Demographic Trends in Trust in Science

In order to understand if any demographic categories were more likely to have a particular trust attitude towards science, we ran statistical tests to identify any relationships between responses to the trust questions and demographic categories. A noteworthy finding was statistically significant differences in the degree of trust between Dublin residents and the rest of the country²³. People from Dublin city are more likely to *partially distrust* 'scientists in Ireland' (25%) than those from the rest of the country (1%).

When you think of SCIENCE, what are the first things that come to mind?

“It's the frontier of important knowledge, a double-edged sword, as (thinking of the 75th anniversary of the bombs being dropped on Japan) science creates terrible weapons as well as potential cures for diseases.

Woman, 56, Dublin

Table 1.

Cross-tabulation showing the level of trust in scientists in Ireland across residents from Dublin city and from the rest of Ireland.^{24 25}

Level of trust proportions in %						
Location	Completely distrust	Partially distrust	Neither distrust nor trust	Partially trust	Completely trust	Total
Rest of country	1	1	13	48	37	100
Dublin	0	25	3	37	35	100
Total	1	4	12	47	37	100

To a similar degree, there were differences between Ethnic Groups in the trust for scientists at publicly-funded institutions in Ireland to 'create useful knowledge'²⁶, with 21% of people from Other Ethnic Groups in Ireland showing complete distrust compared to 0% of people from White Ethnic Groups.

Table 2.

Cross-tabulation showing the level of trust in scientists at publicly funded institutions to create useful knowledge across Ethnic Groups.²⁷

Level of trust proportions in %						
Ethnicity	Completely distrust	Partially distrust	Neither distrust nor trust	Partially trust	Completely trust	Total
Other Ethnic Groups	21	0	14	52	14	100
White Ethnic Groups	0	4	13	44	40	100
Total	1	4	13	44	39	100

23 $\chi^2(4) = 159.880, p < .001, V = .40$

24 $n_{\text{rest of country}} = 864, n_{\text{Dublin}} = 115$

25 In this report, individual percentage counts are rounded. Using the raw data, all totals equal 100%.

26 $\chi^2(4) = 171.515, p < .001, V = .42$

27 $n_{\text{white}} = 941, n_{\text{other ethnic groups}} = 29$

2.2.5 | Developments in Irish Trust in Science Since 2018

Using data from the Wellcome Global Monitor 2018 (WGM), we can see how Irish trust in science has changed over time.

When comparing the current results to the data from the 2018 WGM²⁸, Figure 8 shows that the percentage of Irish trust in 'science' is higher in the 2020 SFI Barometer results (+4% for *partial trust*, +3% for *complete trust*), while *partial distrust* decreased (-6%).

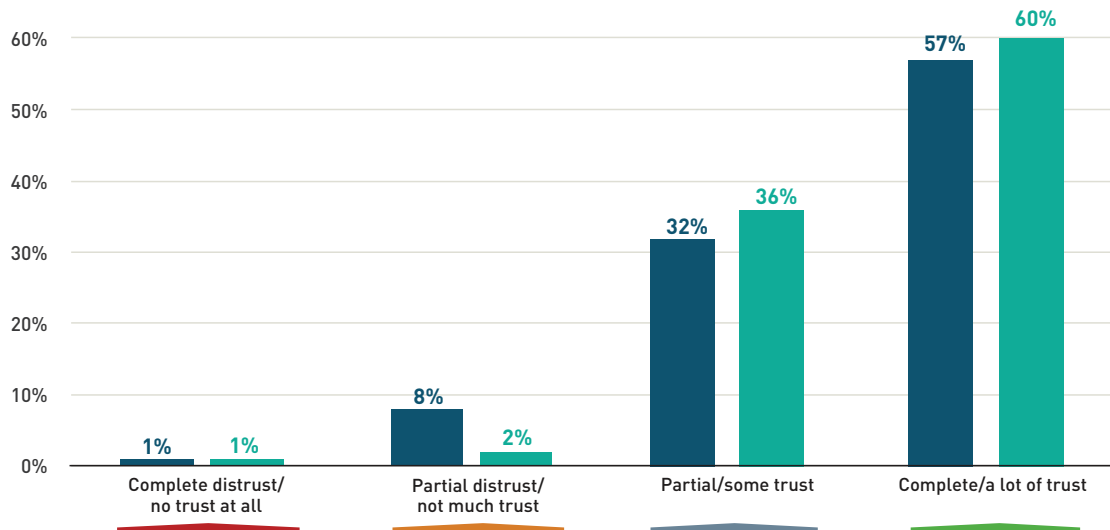


Figure 8.

Comparison between levels of Irish trust in science, 2018-2020.²⁹

²⁸ The WGM 2018 drew its sample by stratifying and randomly selecting landline and mobile telephone numbers, while the SFI Barometer 2020 sample was collected through stratified and random postal sampling (see Appendix A for details). Both approaches are forms of probability sampling.

²⁹ WGM $n = 1000$, SFI 2020 $n = 979$

Below, Figure 9 shows negligible change in trust in ‘scientists’ from 2018 compared to 2020. The most prominent differences emerging from these comparisons of trust in Irish professionals is the increase in distrust in ‘journalists’ (+27%) and ‘the government’ (+16%).

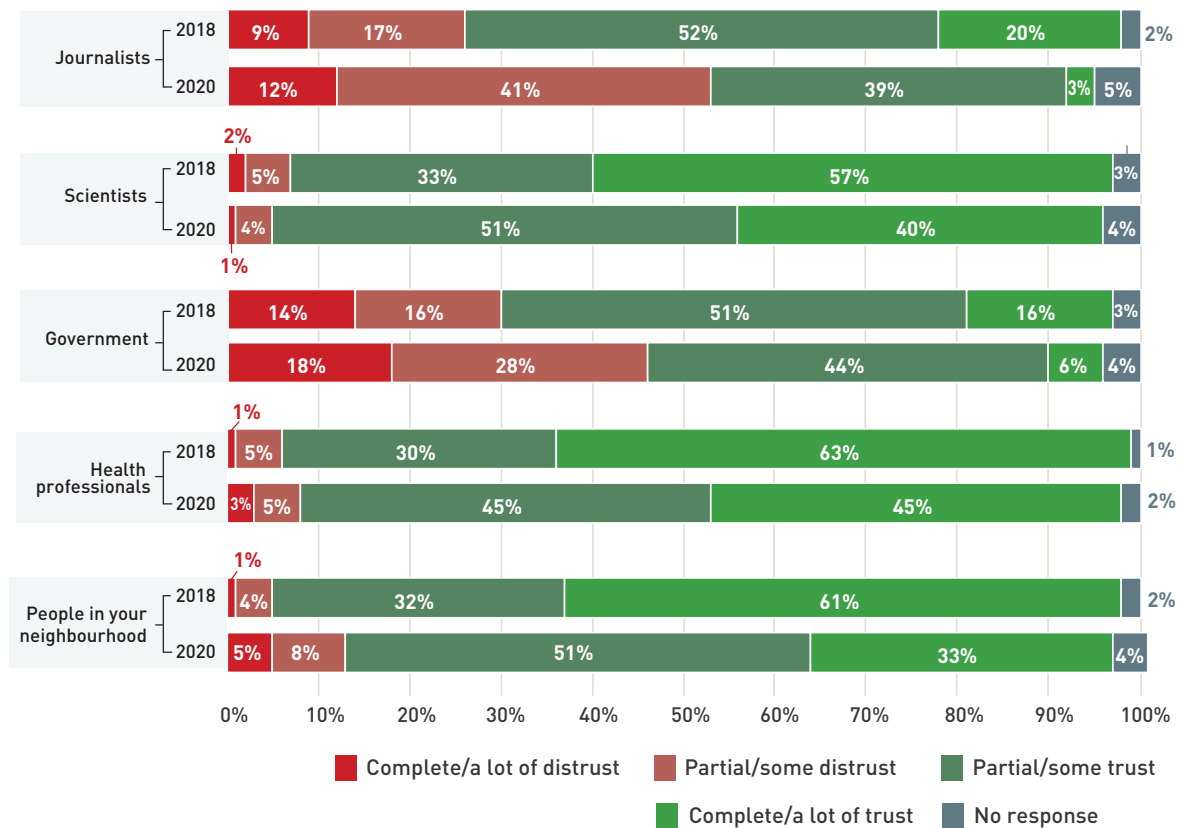


Figure 9.

Comparison between trust in Irish professionals, 2018 and 2020.³⁰

³⁰ Legend denotes 2020 Barometer response option/WGM 2018 response option.

2.3 | Perceptions of Science

Section Summary

Here, we present results to survey questions relating to the Irish public's perceptions of science. This includes personal attitudes towards and experiences with science in everyday life, perceptions about science careers, and the ease and importance of doing and being informed about science.

Key findings

- Science was largely seen as valuable on a personal level; three-quarters (75%) of people in Ireland thought that 'science is useful in solving everyday problems in [their] lives' and to a greater extent (91%) that 'learning science changes [their] ideas about how the world works'.
- However, only just over half (53%) of the population agreed that 'with hard work, anyone can be a scientist'.
- People with lower levels of education were less likely to see a 'relationship between their real-world experiences and science'³¹.

A notable finding from these results (Figure 10) is that a very large proportion of the Irish population regarded science as something with the power to 'change [their] ideas about how the world works' (91%). Similarly, the majority of the population (75%) identified science as 'useful for solving everyday problems in their lives' and as something that relates to 'what [they] experience in the real world' (83%). However, only just over half (53%) of the population agree that 'with hard work, anyone can be a scientist'. This indicates a clear distinction in the perception of the majority of the Irish population between using basic science on an everyday, personal level, and the accessibility of doing science at such a level that warrants the characterisation of being a 'scientist'.

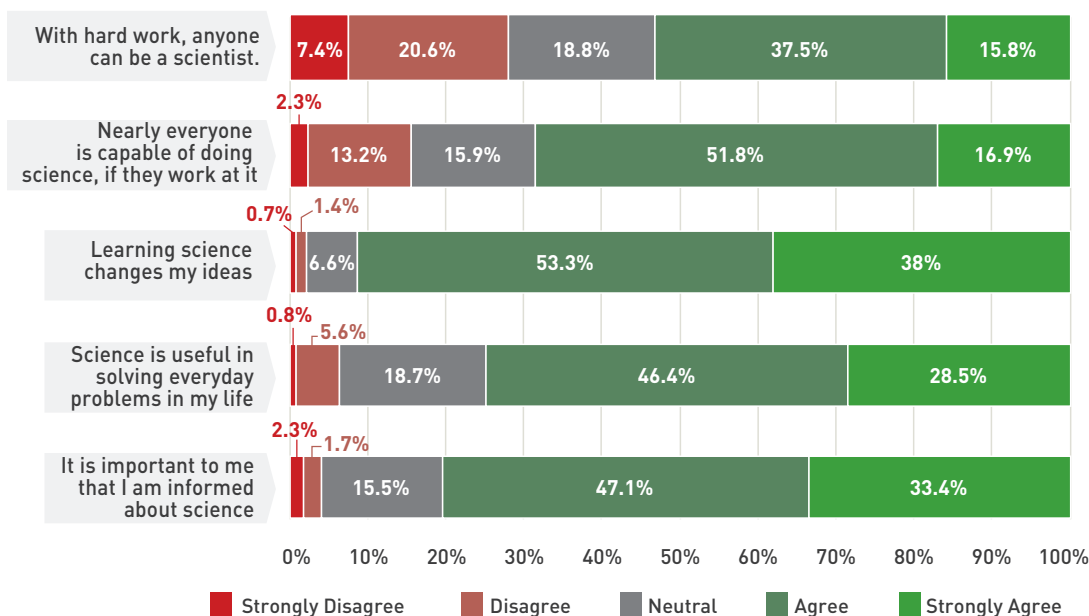


Figure 10.

Perceptions of science and scientific work - "To what extent do you disagree or agree with each of the following statements?"³²

³¹ $r_s = -.31, p < .001$

³² Margin of error: $\pm 3\%$
 n (top to bottom): 972, 973, 966, 968, 963

This notion of the potential inaccessibility of science is echoed in Figure 11 which shows that an extremely large proportion of the population consider science to be something that ‘some people will always struggle with’ (78%). However, this contrasts with 63% who disagree with the idea that ‘science is too difficult to understand’. However, this contrasts with 63% who disagree with the idea that ‘science is too difficult to understand’.

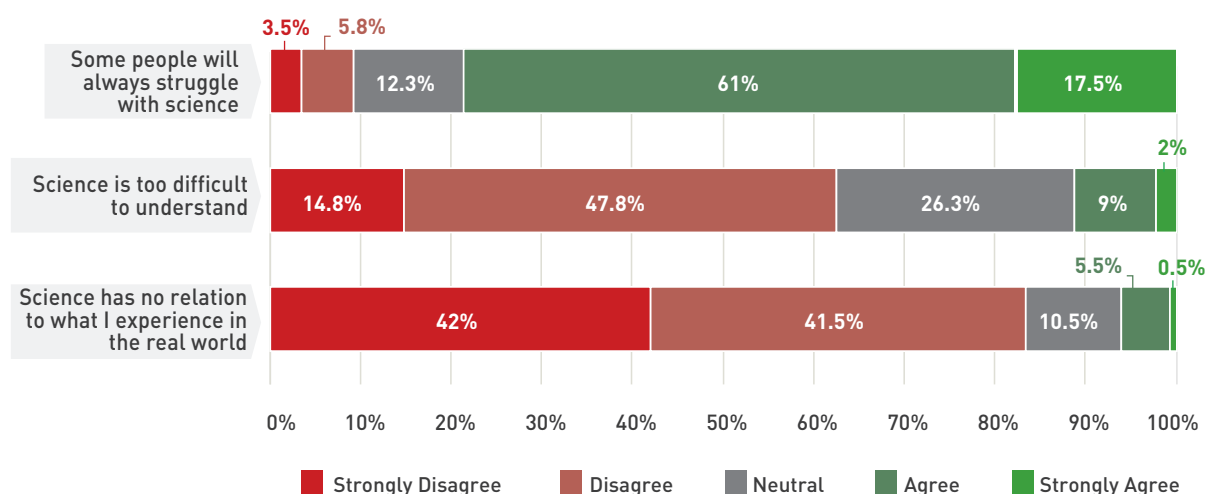


Figure 11.

Perceptions of science and scientific work (reverse-coded items) - “To what extent do you disagree or agree with each of the following statements?”³³

2.3.1 | Demographic Trends in Perceptions of Science

Further analyses revealed an interplay between education level and the relationship of science to everyday, ‘real world’ experiences. We found that the lower the education level, the more likely people in Ireland are to agree that there is no relationship between their real-world experiences and science³⁴.

When you think of **SCIENCE**, what are the first things that come to mind?

“Extremely important aspect of society and countries as whole, as it improves education and is crucial to understanding health and how we can improve it for healthier lifestyles and longer lives.

Man, 22, Monasterevin

When you think of **SCIENCE**, what are the first things that come to mind?

“Experiments... and information I can’t understand

Woman, 41, Cork

³³ Margin of error: ±3%
n (top to bottom): 967, 976, 978

³⁴ There was a moderate negative correlation between education level and level of agreement that ‘science has no relation to what I experience in the real world’ $r_s = -.31, p < .001$

2.4 Perceptions of Science in Public Policy

Section Summary

Here, we explore perceptions of public investment in scientific research, as well as attitudes about scientific research and the extent to which evidence should be taken into account during the creation of government policy and development of national priorities.

Key findings

- There was high public confidence in the role of science in policy-making contexts: 79% of people agreed that ‘scientific evidence should guide public policy’.
- However, a rather small proportion agreed that ‘the general public should have a say in how science develops’ (42%). Agreement with this statement was far more common amongst people from Other Ethnic Groups (79%) than people from White Ethnic Groups (40%).
- The Irish public also saw science as worth spending public money on (79%), with a considerable proportion of people also having expressed support for spending more money on scientific research in the future (76%).

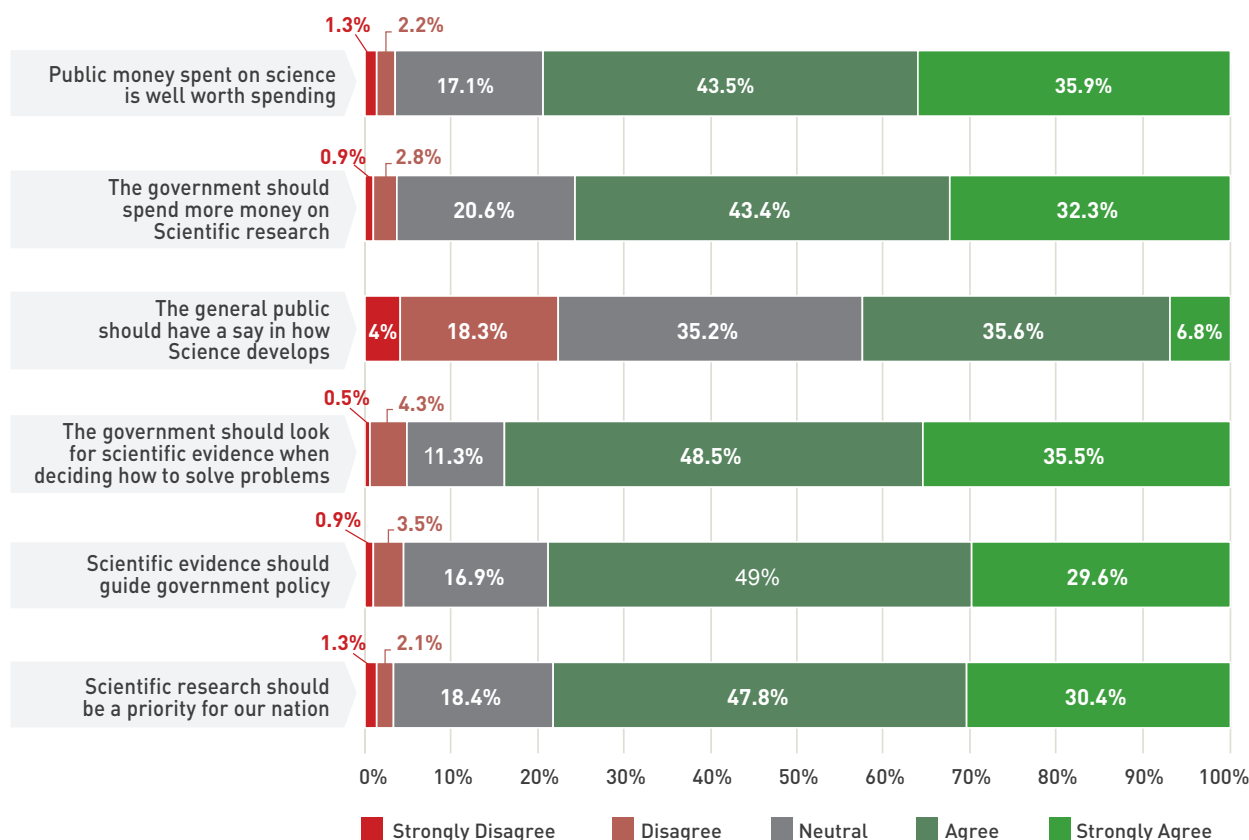


Figure 12.

Perceptions of science in public policy - “To what extent do you disagree or agree with each of the following statements?”³⁵

³⁵ Margin of error: ±3%

n (top to bottom): 951, 901, 931, 962, 938, 946

Generally, the Irish public expressed a lot of support for science funding. Specifically, 79% agreed that ‘public money spent on science is well worth spending’, while three-quarters (76%) of the population agreed that ‘the government should spend more on scientific research’. A similar proportion of people (74%) objected to the idea that ‘too much money’ is being spent on science.

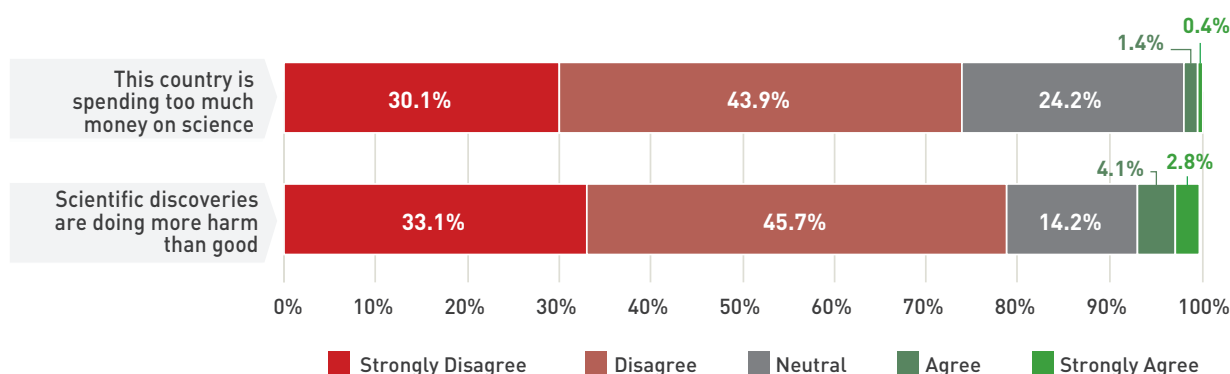


Figure 13.

Perceptions of science in public policy (reverse-coded items) - “To what extent do you disagree or agree with each of the following statements?”³⁶

These results also provide an evidence base with which to potentially align the gap between scientific evidence and decision-making in public policy. An overwhelming 84% of the Irish population thought that ‘the government should look for scientific evidence when deciding how to solve problems’, and more than three-quarters (79%) agree that ‘scientific evidence should guide public policy’.

2.4.1 | Demographic Trends in Perceptions of Science in Public Policy

In terms of differences between demographic groups’ responses to survey questions dealing with perceptions of science in public policy, we found no noteworthy results.

When you think of SCIENCE, what are the first things that come to mind?

“Scientist often let the public down, by not properly explaining the findings and often relaying only the positive, or making the findings overly complex alienating those who do not have background in the topic. [...]

Man, 25, Dublin



76%

of the Irish population think science should receive more funding.

³⁶ Margin of error: ±3%
n (top to bottom): 881, 956

2.5 | Perceptions of Science in Society

Section Summary

This section explores public perceptions towards scientific research in terms of how it interacts with societal problems. This includes looking at the extent to which the Irish public think scientific work is directed towards societal issues relating to the lives of ‘ordinary’ people. It also explores the possibilities of the public feeling excluded from science in terms of its focus, and their perception of its social diversity. With regards to this section in particular, it is important to reiterate that although responses from different demographic groups were weighted so that results are representative of the overall population (see section 9.2.3), a large proportion of these results represent the views of people from White Ethnic Groups (95.6%). Equally important to consider is the fact that these results could not include the views of non-binary respondents, as they could not be accurately weighted to be representative of the population (see section 9.3.1 for details regarding why).

Key findings

- The Irish public were confident about science’s positive impact on society, with 84% agreement that ‘science is making the world a better place’.
- The majority of the Irish public agreed that ‘scientists have a professional responsibility to talk about research findings with the public’ (85%), but a smaller proportion agreed that ‘people who will be directly affected by scientific research should have a say in how it develop’ (65%).
- Women were slightly more likely than men to agree that ‘we need more gender diversity in science’³⁷.
- The Irish population have, on average, become more certain about the positive impact of science in ‘ordinary people’s’ lives since 2018 (+16%).

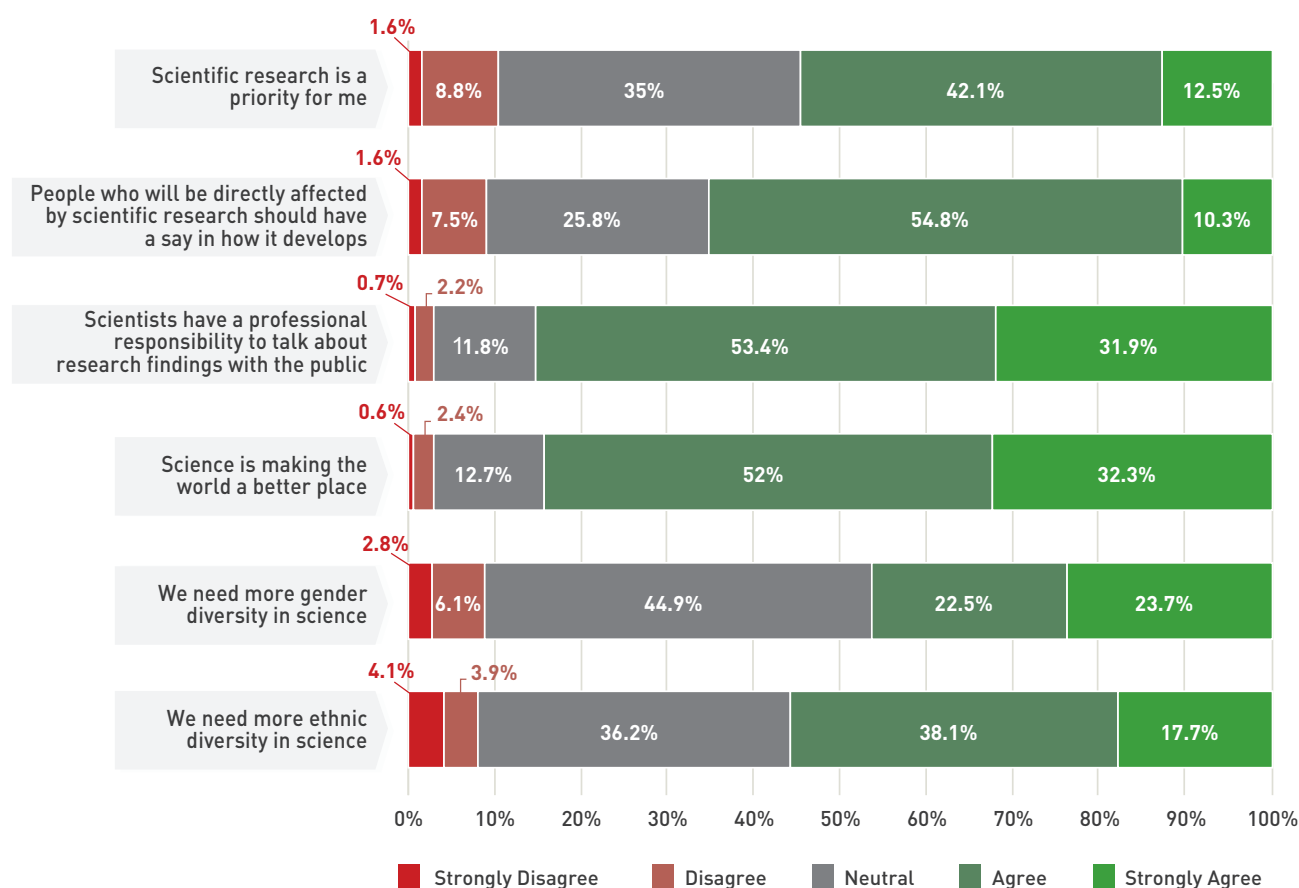
When you think of SCIENCE, what are the first things that come to mind?



Essential for active citizenship and to understand the world we live in

Woman, 55, Navan

37 $U = 19011.5, p < .001, r = -.2, \eta^2 = .04$

**Figure 14.**

Perceptions of science in society – “To what extent do you disagree or agree with each of the following statements?”³⁸

The results in this block show that there was a generally high level of agreement amongst the Irish population (85%) towards the idea that ‘scientists have a professional responsibility to talk about research findings with the public’. However, a much lower level of agreement (65%), and higher levels of neutrality (26%) were identified with the statement that ‘people who will be directly affected by scientific research should have a say in how it develops’. This indicates an uneven expectation towards the different directions of science communication in Irish society. In other words, there is a higher expectation for the scientific community to communicate with the public, compared to a lower expectation for the public to communicate with the scientific community about the development of science.

When you think of SCIENCE, what are the first things that come to mind?

“Possibly not as inclusive as it could be to some people in terms of ease of accessibility or presentation

Man, 29, Athlone

38 Margin of error for first four items: $\pm 3\%$
 Margin of error for gender diversity item: $\pm 4\%$
 Margin of error for ethnic diversity item: $\pm 5\%$
 n (top to bottom): 928, 940, 938, 947, 481, 397

A notable finding in Figure 14 which further validates earlier findings in this report about the public's perception of science as socially responsible is that a very high proportion of the population (84%) agreed that 'science is making the world a better place'. However, the results also suggest an uncertainty amongst the public about social diversity within science. Over half (56%) of the public agreed that 'we need more ethnic diversity in science'³⁹, along with 46% who agree that 'we need more gender diversity in science'.

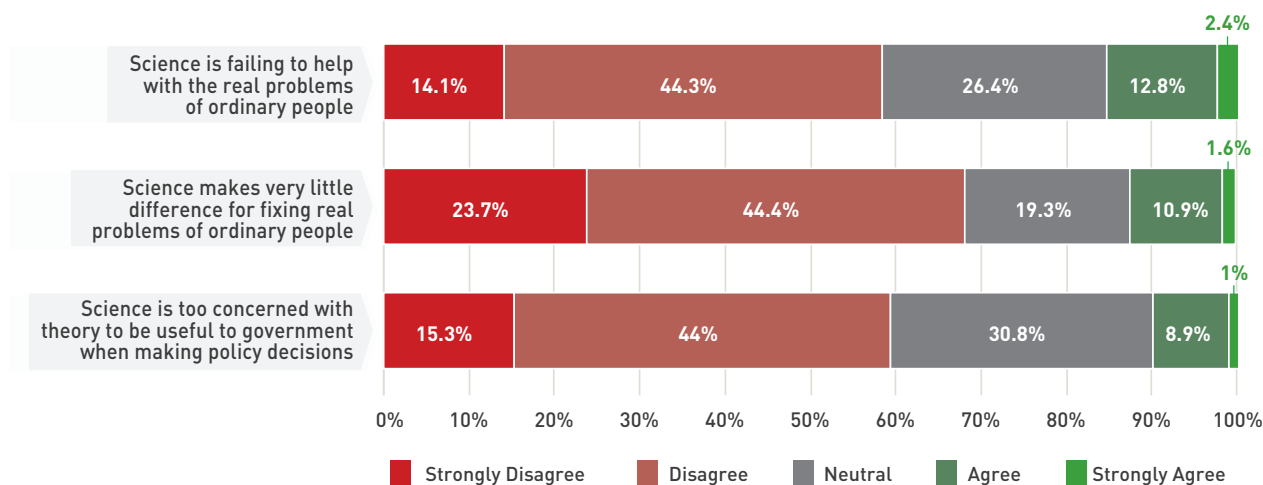


Figure 15.

Perceptions of science in society (reverse-coded items) – “To what extent do you disagree or agree with each of the following statements?”⁴⁰

The results from Figure 15 further demonstrate the overall majority agreement that science is helping and making a difference for fixing (68%) and helping (58%) with the real problems of ‘ordinary people’ and is useful in policy-making contexts (59%). However, though a minority, the fact that 15% of the population agree that ‘science is failing to help with the real problems of ordinary people’ is arguably notable.

2.5.1 | Demographic Trends in Perceptions of Science in Society

In terms of quantity, more demographic differences were found in responses to the survey questions in this section than any other. Firstly, a weak relationship was found between gender and attitudes towards gender diversity in science. Indeed, women were slightly more likely than men to agree that we need more gender diversity in science⁴¹. This is also supported by the fact that for women, the median response option to this survey question was agree, whereas for men, the median response was *neutral*⁴².

When you think of SCIENCE, what are the first things that come to mind?

[...] better quality of living and medical advancements which also helps to improve society and the world at large.

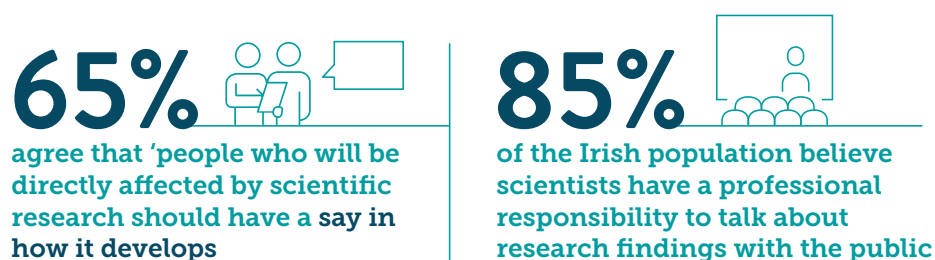
Woman, 50, Clonsilla

³⁹ These results in particular should be read with the consideration in mind that the large majority of respondents to this survey were people from White Ethnic Groups (95.6%).

⁴⁰ Margin of error: $\pm 3\%$
 n (top to bottom): 917, 931, 911

⁴¹ $U = 19011.5, p < .001, r = -.2, \eta^2 = .04$. (This result means that gender can account for only 4% of the variance in this variable.)

⁴² With regards to this question about attitudes towards gender diversity in particular, it is important to reiterate that these results could not include the views of non-binary respondents, as they could not be accurately weighted to be representative of the population (see section 9.3.1 for details regarding why).



While a statistically significant difference between ethnicity and attitudes towards the need for more ethnic diversity in science was found⁴³, the differences were very small in size. However, there were differences of a moderate size between age groups in the level of agreement that 'we need more ethnic diversity in science'⁴⁴. The majority (58%) of 30-34-year-olds *strongly agreed* with the statement, followed by 46% of 20-24-year-olds, and only one-third (33%) of 55-59-year-olds.

Table 3.

Cross-tabulation showing the distribution of agreement with the statement 'We need more ethnic diversity in science' across age groups.⁴⁵

Level of agreement proportions in %						
Age Group	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
15-19	0	0	43	43	14	100
20 – 24	0	3	26	26	46	100
25 – 29	6	0	6	59	28	100
30 – 34	0	11	22	11	56	100
35 – 39	2	2	43	41	13	100
40 – 44	3	10	33	37	17	100
45 – 49	0	16	61	16	6	100
50 – 54	0	4	78	11	7	100
55 – 59	0	0	44	22	33	100
60 – 64	7	4	11	74	4	100
65+	10	3	32	47	8	100
Total	4	4	36	38	18	100

Furthermore, we found differences in agreement with the statement that 'the general public should have a say in how science develops'⁴⁶, with nearly two-thirds of people from Other Ethnic Groups (59%) *strongly agreeing* as opposed to 4% of people from White Ethnic Groups. More than one-third of people from White Ethnic Groups (37%) expressed a *neutral* opinion compared to only 5% of people from Other Ethnic Groups.

43 $U = 1070.5, p < .001, r = -.02 \eta^2 < .001$

44 $\chi^2(40) = 134.026, p < .001, V = .31$

45 n (top to bottom): 37, 35, 32, 18, 63, 30, 31, 27, 18, 27, 77

46 $\chi^2(4) = 184.522, p < .001, V = .45$

Table 4.

Cross-tabulation showing the distribution of agreement with the statement ‘The general public should have a say in how science develops.’ across Ethnic Groups.⁴⁷

Level of agreement proportions in %						
Ethnicity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Other Ethnic Groups	5	12	5	20	59	100
White Ethnic Groups	4	19	37	36	4	100
Total	4	18	35	36	7	100

There were also differences between Ethnic Groups in the level of agreement with ‘we need more gender diversity in science’.⁴⁸ Nearly two-thirds (60%) of people from Other Ethnic Groups disagreed with this statement, compared to only 7% of people from White Ethnic Groups.

Table 5.

Cross-tabulation showing the distribution of agreement with the statement ‘We need more gender diversity in science’ across Ethnic Groups.⁴⁹

Level of agreement proportions in %						
Ethnicity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Other Ethnic Groups	0	60	10	20	10	100
White Ethnic Groups	3	4	46	23	24	100
Total	3	6	45	22	24	100

On the same gender diversity variable, we found moderately different levels of agreement in relation to education levels (table below).⁵⁰ People with no formal education, primary education, and people with a Ph.D. or higher tended to *strongly agree* that science needs more gender diversity (68%, 54%, and 71% respectively), followed by only 34% of people with postgraduate diplomas or degrees.

47 $n_{\text{white}} = 887$, $n_{\text{other ethnic groups}} = 41$

48 $\chi^2(4) = 104.895$, $p < .001$, $V = .47$

49 $n_{\text{white}} = 462$, $n_{\text{other ethnic groups}} = 20$

50 $\chi^2(40) = 216.730$, $p < .001$, $V = .34$

Table 6.

Cross-tabulation showing the distribution of agreement with the statement ‘we need more gender diversity in science’ across education levels.⁵¹

Level of agreement proportions in %						
Formal education	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
No formal education/training	0	0	32	0	68	100
Primary education	0	44	0	0	56	100
Lower Secondary	0	12	44	21	23	100
Upper Secondary	4	5	49	27	16	100
Technical or Vocational	7	0	73	18	2	100
Advanced Certificate/ Completed Apprenticeship	0	3	72	19	6	100
Higher Certificate	18	0	36	27	18	100
Ordinary Bachelor Degree or National Diploma	8	0	53	26	13	100
Honours Bachelor Degree/Professional qualification or both	0	2	38	38	22	100
Postgraduate Diploma or Degree	4	4	30	28	34	100
Doctorate (Ph.D.) or higher	0	0	20	20	60	100
Total	3	6	45	23	24	100

Similar results were observed for the statement ‘we need more ethnic diversity in science’⁵² (table below), where 100% of people with no formal education as well as people with primary education indicated their agreement.

51 n (top to bottom): 37, 25, 66, 111, 45, 36, 11, 38, 58, 47, 5

52 $\chi^2(40) = 153.749, p < .001, V = .31$

Table 7.

Cross-tabulation showing the distribution of agreement with the statement ‘we need more ethnic diversity in science’ across education levels.⁵³

Level of agreement proportions in %						
Formal education	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
No formal education/	0	0	0	100	0	100
Primary education	0	0	0	100	0	100
Lower Secondary	6	0	61	24	8	100
Upper Secondary	6	11	35	33	16	100
Technical or Vocational	10	0	52	33	5	100
Advanced Certificate/ Completed	0	0	40	40	20	100
Higher Certificate	0	3	23	60	13	100
Ordinary Bachelor Degree or National	3	5	41	28	23	100
Honours Bachelor Degree/Professional	4	2	26	22	46	100
Postgraduate Diploma or	3	5	35	30	28	100
Doctorate (Ph.D.) or	0	0	25	50	25	100
Total	4	4	36	38	18	100



“we need more ethnic diversity in science”...

100% of people with no formal education
as well as people with primary education
indicated their agreement.

53 n (top to bottom): 13, 28, 83, 83, 21, 10, 30, 39, 50, 40, 4

2.5.2 | Irish Perceptions of Science in Society Since 2018

Using data from the most recent WGM, we were able to explore how Irish attitudes towards the positive impact of science on the lives of ‘ordinary people’ have changed since 2018. While a slightly different measure was used in the 2018 survey, both measures reflect the extent to which the Irish population feel excluded from or included in the purpose of science and its impacts. As Figure 16 shows, there was a 16% increase in responses which indicated feeling included in the positive impacts of science, and a 21% decrease in *neutral* responses to survey questions about the inclusivity of the impacts of science from 2018 to 2020. This may indicate that the Irish population have, on average, become more certain about the influential nature of science in ‘ordinary people’s’ lives since 2018.

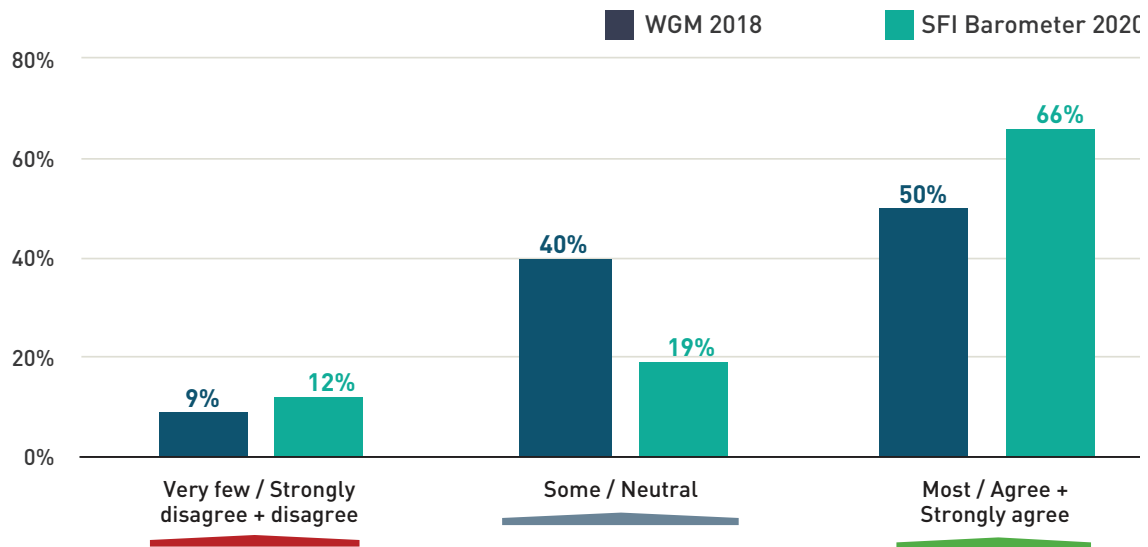


Figure 16.

Comparison of Irish responses to questions about perceptions of the inclusivity of the impacts of science on society^{54,55}

54 Comparison uses data from agreement levels to the statement “Science makes very little difference for fixing real problems of ordinary people” from the SFI Barometer 2020 and responses to the question “In general, do you think the work that scientists do benefits some, most, or very few people in this country?” from the WGM 2018. Our negative response options ‘strongly disagree’ and ‘disagree’ were collapsed into one category corresponding to WGM’s single negative response option ‘very few’. ‘Neutral’ (SFI 2020) was equated with ‘some’ (WGM 2018) and ‘agree’ and ‘strongly agree’ (SFI 2020) were collapsed for comparison with ‘most’ (WGM 2018). Comparison uses data from agreement levels to the statement “Science makes very little difference for fixing real problems of ordinary people” from the SFI Barometer 2020 and responses to the question “In general, do you think the work that scientists do benefits some, most, or very few people in this country?” from the WGM 2018.

55 WGM 2018 $n = 1000$, SFI 2020 $n = 931$

2.6 | Self-Perception of Science Capabilities

Section Summary

This section sets out the results to survey questions exploring the Irish public's self-perceptions of their understanding of science and capability to do science. These self-report items are the best indicators available to gain a perspective on the public's understanding or knowledge of science, as there is no consensus in science survey literature with regards to a well validated, and sufficiently short 'science knowledge' index⁵⁶. Further, self-reported data about science knowledge is arguably more illuminating than any objective science literacy test would be anyway, as people tend to form attitudes based on their self-perception of science knowledge, rather than what they actually know.

Key findings

- More than three-quarters (79%) of people said that they 'feel capable of understanding science'.
- A smaller proportion of people felt 'generally well informed about science' (56%).
- When compared to 2018 data, positivity around feeling informed about science has increased (+18%).
- While 39% of people felt they would be capable of 'being a scientist', this dimension of the public's views of science was the least positive, with 31% disagreement.
- While still only found in a minority of people, older generations^{57,58} and those with lower levels of education^{59,60} had lower levels of confidence in personal capabilities to do and understand science.



79%
feel capable of
understanding
science, but just



40%
identify as the type
of person who could
be a scientist

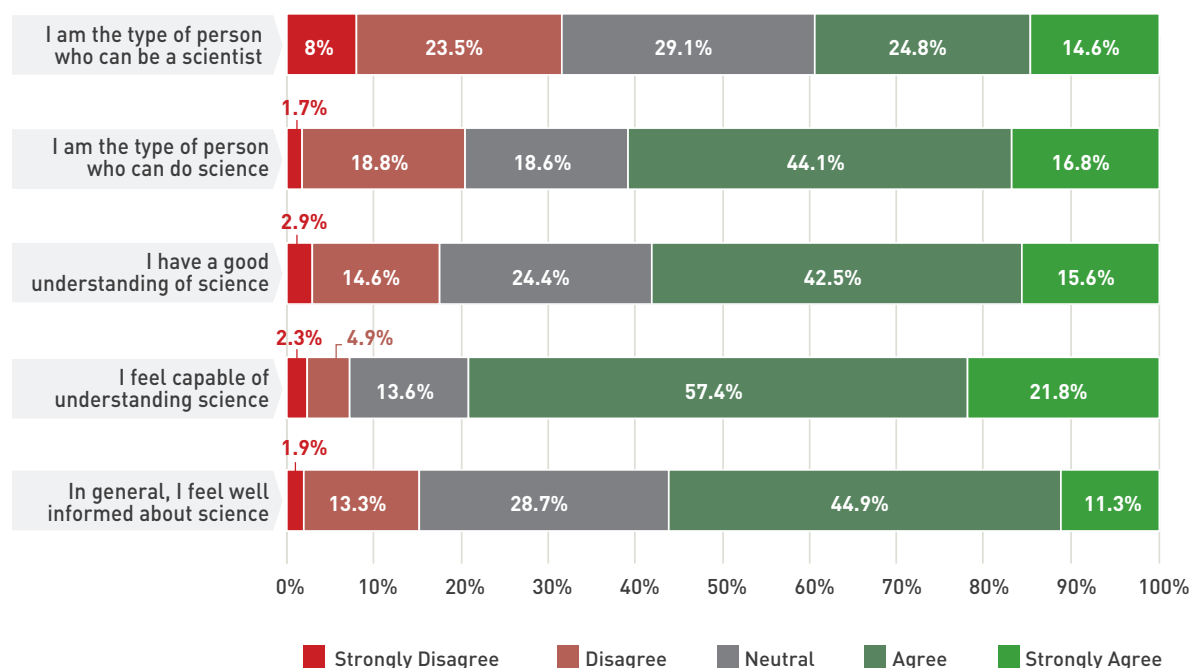
56 SFI Barometer 2020 Literature Review. The WGM 2018, however, notes that "self-assessed knowledge [...] and what they actually know [...] are sometimes correlated fairly well" (p.26).

57 $r_s = -.34, p < .001$

58 $r_s = -.31, p < .001$

59 $r_s = .3, p < .001$

60 $r_s = .32, p < .001$

**Figure 17.**

Self-perceptions of science capabilities - “To what extent do you disagree or agree with each of the following statements?”⁶¹

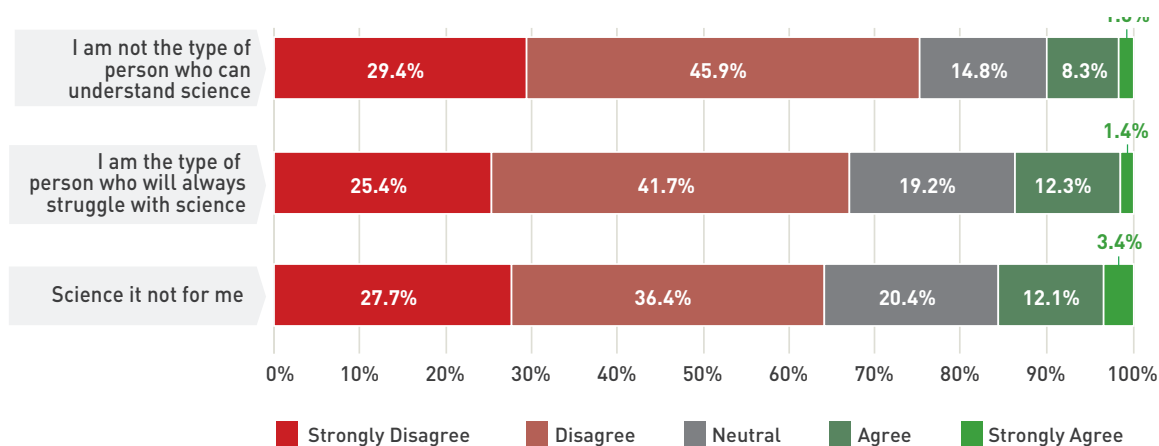
Over half of the population thought that science is something that they can do (61%), have a good understanding of (58%), and feel well informed about (56%) - though these are notably lower proportions of the population compared to attitudinal statements about science. Despite this, there was an especially high level of agreement (79%) with the statement ‘I feel capable of understanding science’ and a median response of *agree*. This indicates the majority of the population feel more confident about their capability to understand science. In contrast, the perceived accessibility of ‘being a scientist’ - a perception heavily influenced by self-perception of science capabilities - was low. Just 39% agreed to some extent that they were ‘the type of person who could be a scientist’, and this statement received the highest levels of disagreement (31%), and a median of *neutral*.

When you think of SCIENCE, what are the first things that come to mind?

“Difficult subjects especially chemistry and physics

Woman, 60, Kilkenny

⁶¹ Margin of error: $\pm 3\%$
n (top to bottom): 971, 981, 982, 965, 973

**Figure 18.**

Self-perceptions of science capabilities (reverse-coded items) - “To what extent do you disagree or agree with each of the following statements?”⁶²

2.6.1 | Demographic Trends in Self-Perceptions of Science Capabilities

More detailed analysis also revealed moderate relationships between age, education level, and self-perceived capabilities to understand and do science. Specifically, we found a moderate negative relationship between age and the variables ‘I am the type of person that can do science’⁶³ and ‘I have a good understanding of science’⁶⁴. In other words, the younger a person is, the more likely they are to see themselves as the ‘type of person’ who can do science, and to have higher levels of self-perceived understanding of science.

There was also a positive relationship between level of education and the variables ‘I am the type of person who can be a scientist’⁶⁵, and ‘I am the type of person who can do science’⁶⁶. This means that the higher the level of formal education, the more likely someone is to think they can ‘do science’ and could ‘be a scientist’.

There were moderate differences in the level of agreement with the statement ‘I have a good understanding of science’⁶⁷ and ‘I feel capable of understanding science’⁶⁸ between ethnic groups. Specifically, a large proportion of people from Other Ethnic Groups strongly disagreed with both statements (26% and 26% respectively), compared with lower proportions of people from White Ethnic Groups (2% and 0% respectively).



62 Margin of error: ±3%
n (top to bottom): 962, 959, 976

63 $r_s = -.34, p < .001$

64 $r_s = -.31, p < .001$

65 $r_s = .3, p < .001$

66 $r_s = .32, p < .001$

67 $\chi^2(4) = 100.974, p < .001, V = .32$

68 $\chi^2(4) = 123.137, p < .001, V = .36$

Table 8.

Cross-tabulation showing the level of agreement with the statement 'I have a good understanding of science' across Ethnic Groups.⁶⁹

Level of agreement proportions in %						
Ethnicity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Other Ethnic Groups	26	0	2	48	24	100
White Ethnic Groups	2	15	25	42	15	100
Total	3	15	24	43	16	100

Table 9.

Cross-tabulation showing the level of agreement with the statement 'I feel capable of understanding science' across Ethnic Groups.⁷⁰

Level of agreement proportions in %						
Ethnicity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Other Ethnic Groups	26	0	0	40	33	100
White Ethnic Groups	1	5	14	58	21	100
Total	2	5	14	58	22	100

When you think of SCIENCE, what are the first things that come to mind?



I studied engineering so the word science sounds familiar to me [...] Science can be complex or very easy – and it is including every human or non human being.

Man, 36, Ballymote

69 n_{white} = 939, n_{other ethnic groups} = 43

70 n_{white} = 923, n_{other ethnic groups} = 41

2.6.2 | Irish Perceptions of Science Capabilities Since 2018

Data from the WGM 2018 offers an opportunity to compare Irish self-perceptions of science knowledge since 2018. Below, Figure 19 shows an overall increase in responses indicating feeling well-informed or knowledgeable about science (+18%), and an overall decrease in responses which indicate the public feeling ill-informed or lacking knowledge about science (-19%). This suggests that the Irish public have become more confident about their grasp of scientific information since 2018.

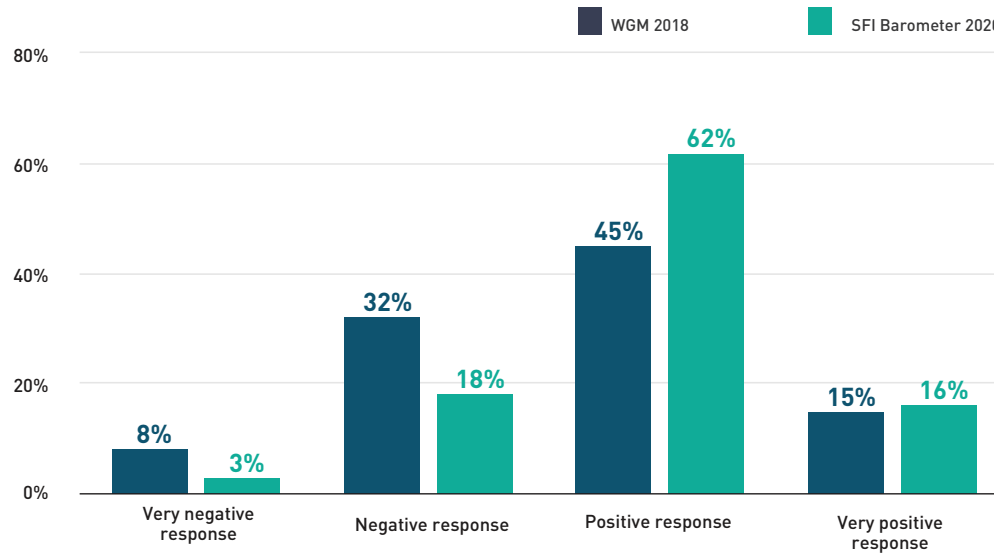


Figure 19.

Comparison between levels of self-perceived science knowledge amongst the Irish population, 2018-2020.^{71,72}

71 Comparison uses data from agreement levels to the statement “In general, I feel well informed about science” from the SFI Barometer 2020 and responses to the question “How much do you, personally, know about science?” from the WGM 2018. For comparing our results with the WGM 2018 data, our response option ‘strongly disagree’ was equated with ‘nothing at all’, ‘disagree’ with ‘not much’, ‘agree’ with ‘some’, and ‘strongly agree’ with ‘a lot’ collapsed into one category corresponding to WGM’s single negative response option ‘very few’. As the WGM 2018 survey did not offer a neutral response option, our ‘neutral’ option could only be treated as missing data for this comparison.

72 WGM 2018 $n = 1000$, SFI 2020 $n = 973$

2.7 | Media Behaviour

Section Summary

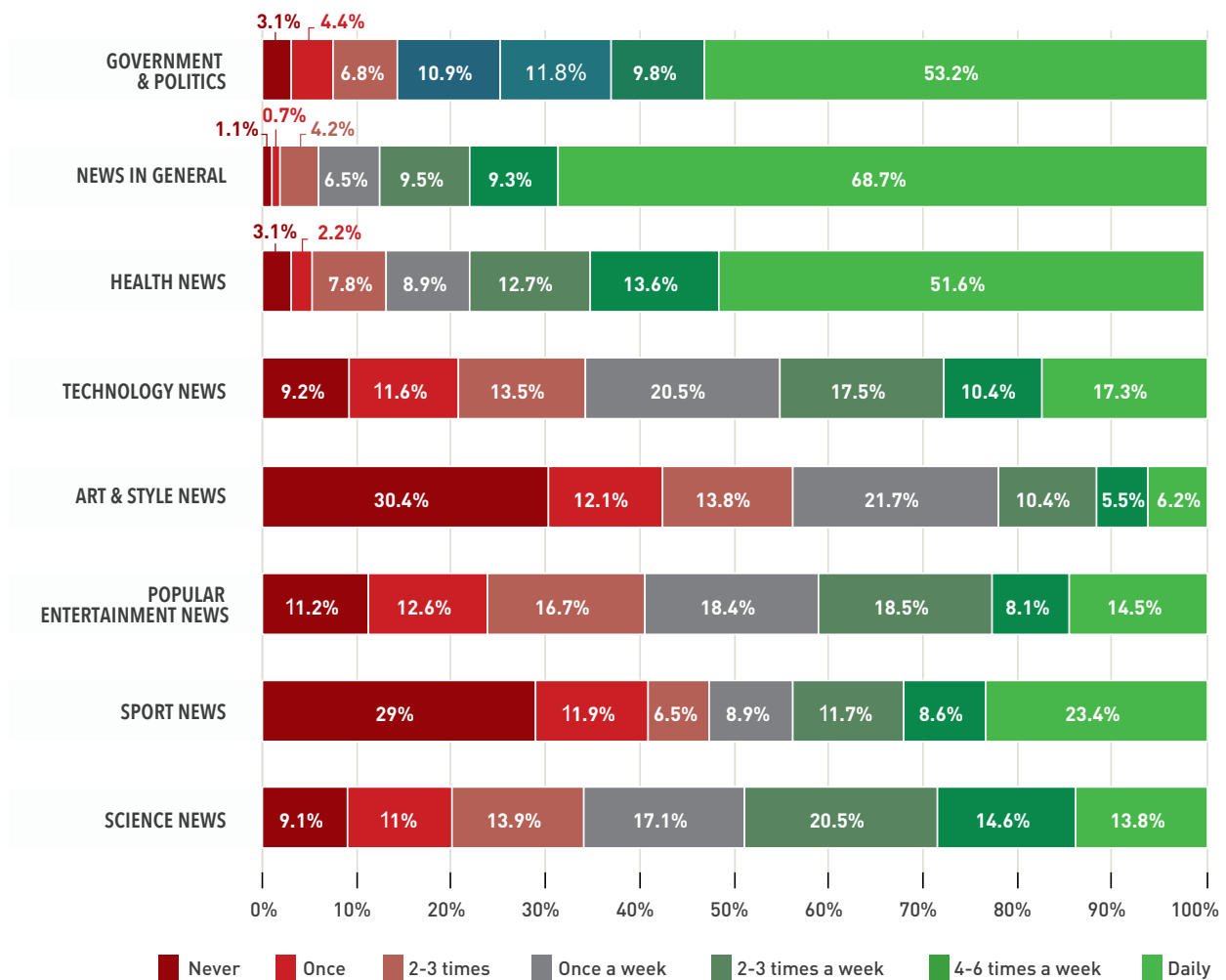
In this section, we present results that may indicate levels of the Irish public's interest in science. This was measured by assessing the public's level of interest in certain news topics, with 'science news' as the key variable of interest. However, including other options also provides an added level of contextual insight with which to understand interest levels in science. This approach mirrors that of many other public attitudes to science surveys across small, advanced economies.

Key findings

- The majority of the Irish public (69%) reported following 'news in general' on a *daily* basis. However, we found a high level of variation and no conclusive trend in the frequency at which people reported following 'science news' specifically, with a median response of *once per week*.
- Popular news types included 'government and politics' and 'health news' with 53% and 52% having reported following them *daily*, respectively.
- Men were found to follow 'technology news' more frequently than women.⁷³



⁷³ $U = 152093.5, p < .001, r = -.36, \eta^2 = .13$. At a moderate effect size, 13% of the variability in the frequency of following technology news can be explained by gender.

**Figure 20.**

Frequency of following different news categories - “Within the last 30 days, how often have you been following what’s going on in:”.⁷⁴

Although the median frequency for checking ‘science news’ was *once a week*, all frequencies were relatively equally represented, with all but one category (*never*, 9%) containing at least 10% of responses. This indicates a high level of variation in interest in ‘science news’. ‘News in general’ was the most popular news category, with 69% of people reporting checking this *daily*, followed by ‘government and politics’ (53%) and ‘health news’ (52%) - a phenomenon likely to be partially due to the COVID-19 pandemic.

⁷⁴ Margin of error: $\pm 3\%$

n (top to bottom): 961, 972, 952, 933, 946, 960, 955, 931

2.7.1 | Demographic Trends in Following Science News

Further analysis revealed that the older someone is, the more likely they are to follow ‘government and politics’ and ‘news in general’ more frequently⁷⁵. Additionally, men were found to follow ‘technology news’ more frequently than women⁷⁶. Between ethnicities, there were noteworthy differences in the frequency of following ‘government and politics news’⁷⁷. A total of 51% of people from Other Ethnic Groups reported following ‘government and politics news’ once a month, compared to only 9% of people from White Ethnic Groups. Conversely, 55% of people from White Ethnic Groups reported following ‘government and politics news’ daily compared to only 12% of people from Other Ethnic Groups.

Table 10.

Cross-tabulation showing the frequency of following government and politics news in the last 30 days across Ethnic Groups.⁷⁸

Frequency proportions in %								
Ethnicity	Never	Once	2-3 times	Once a week	2-3 times a week	4-6 times a week	Daily	Total
Other Ethnic Groups	7	2	9	51	19	0	12	100
White Ethnic Groups	3	4	7	9	12	10	55	100
Total	3	4	7	11	12	10	53	100

2.7.2 | Irish Interest in Science News, 2018-2020

While interest in ‘science news’ has been found to fluctuate across the Irish public, looking at the proportion of the population who reported having sought out science news/information at least once in the past 30 days in 2018 compared to 2020 reveals a huge increase in this measure of interest. Whereas the majority of the population had not sought out science news or information in the past 30 days in 2018 (51%), an overwhelming majority in 2020 had (88%). However, while it is possible that these results may be as a result of a genuine increase in interest in science amongst the Irish public, these results should be considered with the pandemic context of 2020 in mind. That is, any COVID-19 news content is likely to be deemed ‘science news’ or ‘science information’ by the public.

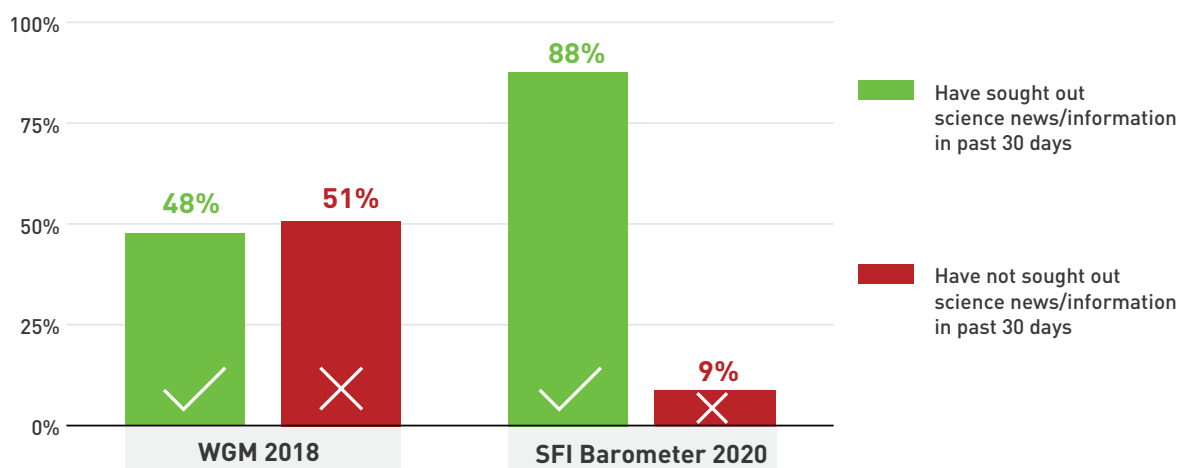


Figure 21.

Comparison between the proportion of the Irish public who have sought out science/news information in the past 30 days, 2018-2020.⁷⁹

⁷⁵ $r_s = .3, p < .001$

⁷⁶ $U = 152093.5, p < .001, r = -.36, \eta^2 = .13$. At a moderate effect size, 13% of the variability in the frequency of following technology news can be explained by gender.

⁷⁷ $\chi^2(6) = 91.342, p < .001, V = .31$

⁷⁸ $n_{white} = 917, n_{other\ ethnic\ groups} = 45$

⁷⁹ SFI 2020 $n = 931$, WGM 2018 $n = 1000$



3

3 | International Comparisons

Using data from the Wellcome Global Monitor, we can explore how trends in Irish attitudes towards science compare with other small, advanced economies.

This is useful not only to understand how Ireland compares internationally, but also to ascertain if certain trends are specific to Ireland - therefore potentially related to certain Irish social, cultural, or economic conditions - or if they reflect wider global trends.

3.1 | Trust in Science

The trust measures used in the SFI Barometer 2020 were directly aligned with those used in the 2018 WGM so that comparisons could be made with other small, advanced economies. However, conclusions from comparisons between the current results and other countries from the 2018 WGM should be drawn with caution. This is because they represent populations' attitudes in markedly different social contexts, with 2018 being pre-COVID-19, and the current results being in the midst of the pandemic.

Overall, Figure 22 shows that Ireland in 2020 has the 3rd highest level of overall trust amongst the countries surveyed in 2018. However, this trust was predominantly expressed at a *partial* level (51%), whereas several other countries with similarly high overall trust levels had slightly more responses which expressed *a lot* of trust, such as Denmark (59%), Sweden (52%), and Finland (59%), compared to Ireland's rate of 40%.

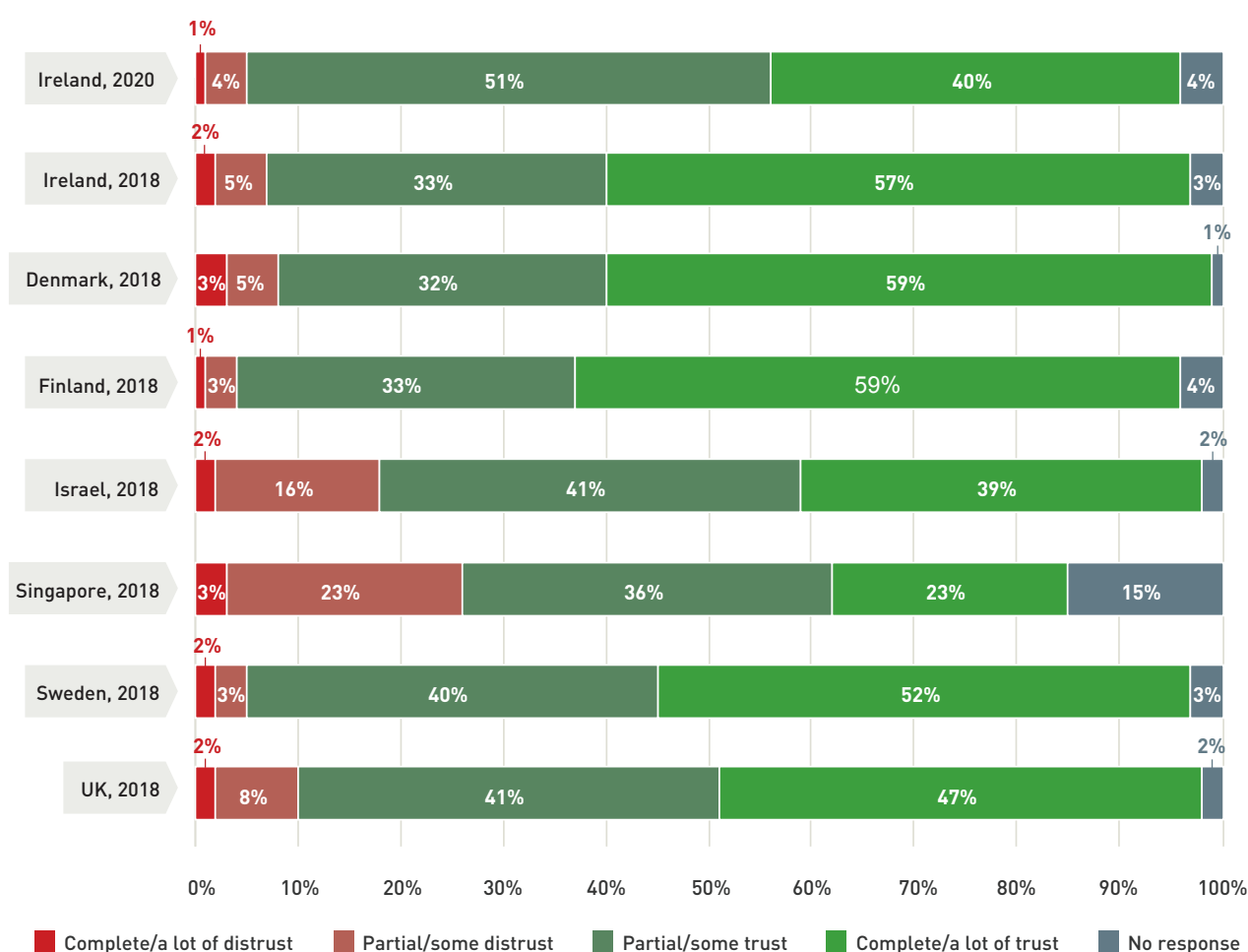


Figure 22.

Comparison of trust in scientists across small, advanced economies.^{80,81}

⁸⁰ Legend denotes 2020 Barometer response option/WGM 2018 response option.

⁸¹ SFI 2020 $n = 992$, WGM 2018 (all countries) $n = 1000$

The findings from this research about the extent to which Ireland trusts different professions largely reflect wider trends from other small, advanced economies. Of the countries relevant for comparison, the highest levels of distrust were consistently directed towards ‘government’ and ‘journalists’. The highest levels of trust were also found for ‘medical health professionals’ and ‘scientists’ (closely followed by ‘people in your neighbourhood’ for the UK and Sweden). However, this is with the exception of Singapore, where ‘people in your neighbourhood’ were trusted more than scientists.

We can also use international data to understand if the areas in which trust in science is seen to be lower amongst Irish people are issues specific to Ireland, or reflect broader trends about trust in science across Europe and in small, advanced economies. For example, we can see from the figure below that the proportion of people in Ireland who distrusted publicly-funded institutions to be ‘open and honest about who is paying for their work’ is relatively similar to the proportions found in comparable small, advanced economies. This means that this phenomenon is not specific to Ireland, but a wider trend found across different countries.

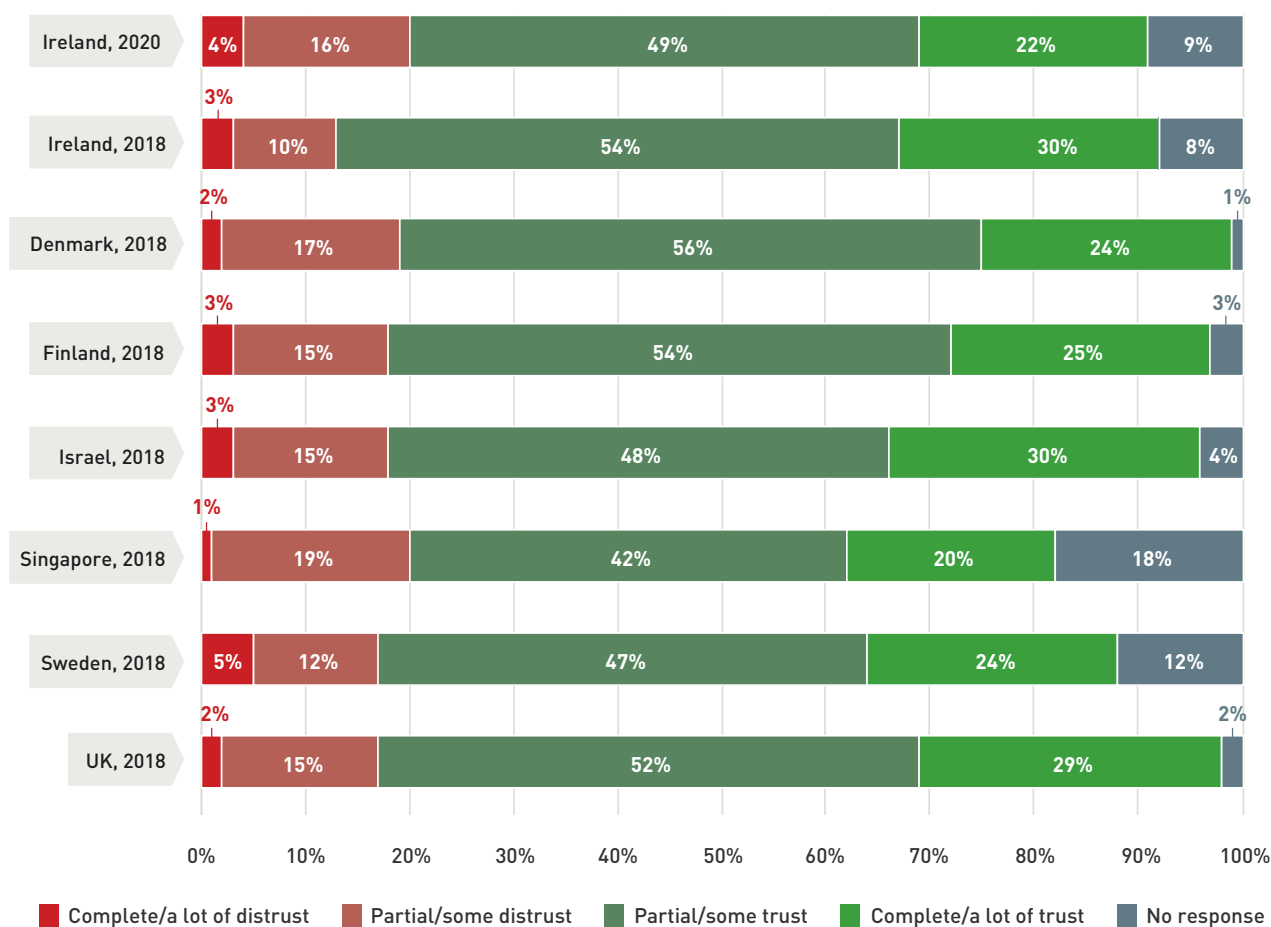


Figure 23.

Comparison of trust in publicly-funded scientific institutions ‘to be open and honest about who is paying for their work’ across small, advanced economies.^{82,83}

Another finding which is important to compare internationally is the fact that Irish people tended to distrust private scientific institutions much more than public scientific institutions, across all trust dimensions. The table and figure below show that, for the questions we have comparable data to, this trend is found across other small, advanced economies, and in the case of Sweden, to a greater extent.

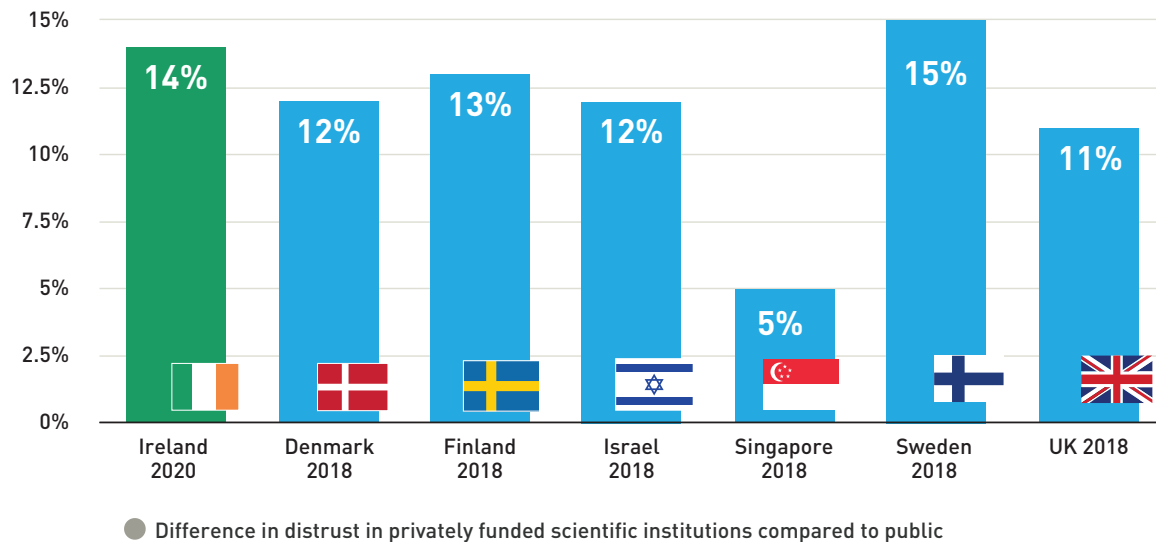
⁸² Legend denotes 2020 Barometer response option/WGM 2018 response option.

⁸³ SFI 2020 $n = 940$, WGM 2018 (all countries) $n = 1000$

Table 11.

Comparison of average rates of distrust in privately-funded institutions compared to publicly-funded scientific institutions across small, advanced economies.⁸⁴

Country	Distrust in publicly-funded scientific institutions	Distrust in privately-funded scientific institutions	Difference in distrust in privately-funded scientific institutions compared to public
Ireland 2020	12%	26%	14%
Denmark 2018	13%	24%	12%
Finland 2018	14%	27%	13%
Israel 2018	14%	26%	12%
Singapore 2018	22%	26%	5%
Sweden 2018	15%	30%	15%
UK 2018	14%	24%	11%

**Figure 24.**

Comparison of the difference in the higher rates of distrust in privately funded institutions compared to publicly funded scientific institutions across small, advanced economies.⁸⁵

⁸⁴ Average valid percentages (= percentages excluding missing values) from all relevant trust variables were taken to estimate overall distrust in privately- and publicly-funded scientific institutions. Note that the categories 'completely distrust' and 'partially distrust' from the SFI Barometer 2020 survey were equated with 'not at all' and 'not much' from the WGM 2018 survey. All WGM 2018 differences drawn from questions with $n = 1000$. SFI 2020 differences drawn from questions (with ns) in section 2.2.3.

⁸⁵ All WGM 2018 differences drawn from questions with $n = 1000$. SFI 2020 differences drawn from questions (with ns) in section 2.2.3.

3.2 | Perceptions of Science in Society

Understandings about Irish perceptions of the impact of science on society can be globally contextualised. As can be observed in the figure below, the Irish public were more certain of the positive impact of science on ordinary people's lives than most other small, advanced economies in 2018 (average +17%), with the exception of Denmark. However, these results should be read with caution, due to the obvious relevance of the COVID-19 pandemic to these questions.

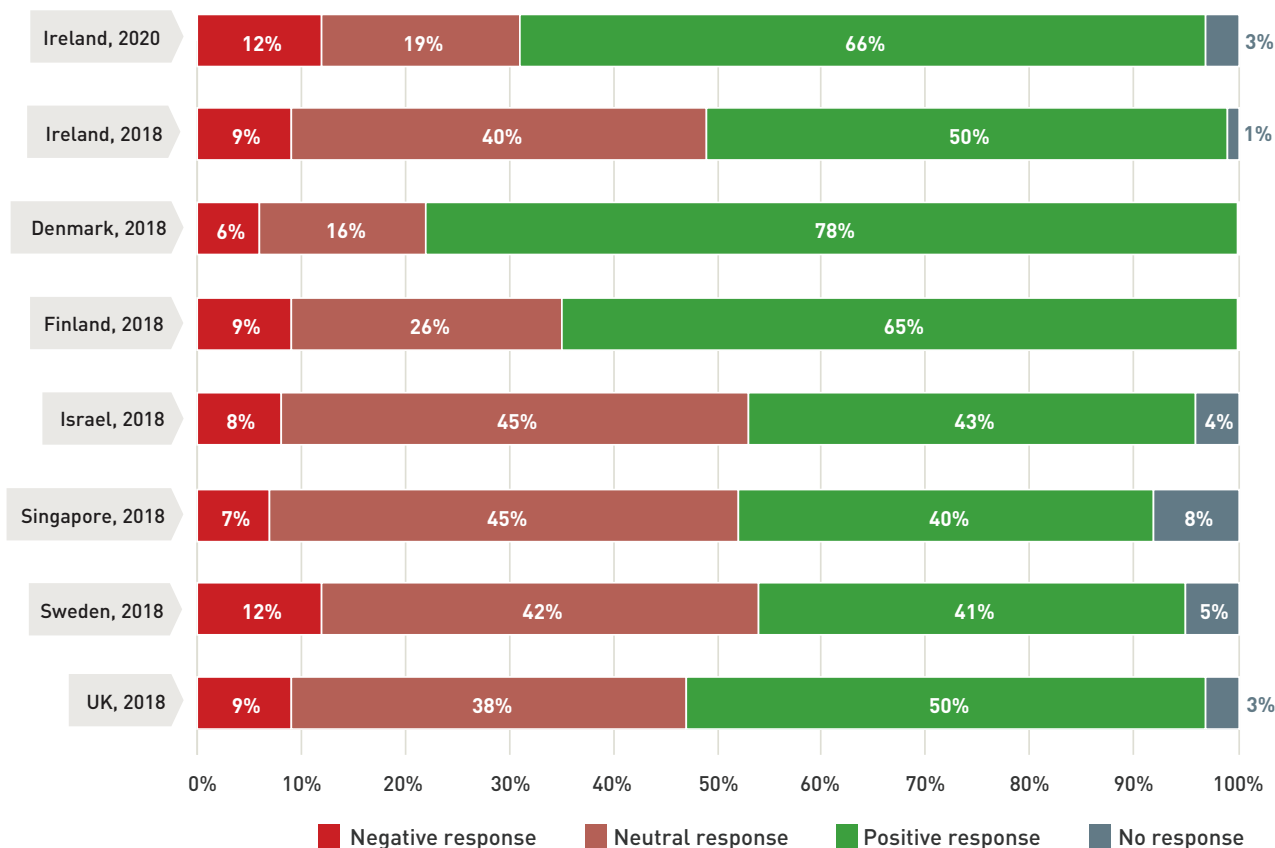


Figure 25.

Comparison of responses to questions about perceptions of the inclusivity of science's impact on society.^{86,87}

⁸⁶ Comparison uses data from agreement levels to the statement "Science makes very little difference for fixing real problems of ordinary people" from the SFI Barometer 2020 and responses to the question "In general, do you think the work that scientists do benefits some, most, or very few people in this country?" from the WGM 2018. Our negative response options 'strongly disagree' and 'disagree' were collapsed into one category corresponding to WGM's single negative response option 'very few'. 'Neutral' (SFI 2020) was equated with 'some' (WGM 2018) and 'agree' and 'strongly agree' (SFI 2020) were collapsed for comparison with 'most' (WGM 2018).

⁸⁷ SFI 2020 n = 931, WGM 2018 (all countries) n = 1000

3.3 | Self-Perception of Science Capabilities

When compared to global data from 2018, the figure below shows Ireland in 2020 as the leading country in terms of overall responses which indicate feeling well-informed about science. The Irish population had 3% higher overall positive responses compared with Denmark, which had the second highest proportion of positive responses. That being said, 21% of the Danish population in 2018 responded as feeling well-informed about science to the strongest degree compared to 16% of the Irish population in 2020. However, it is possible that the increase in self-perceptions of science knowledge found in Ireland from 2018-2020 may be a trend across all small, advanced economies.

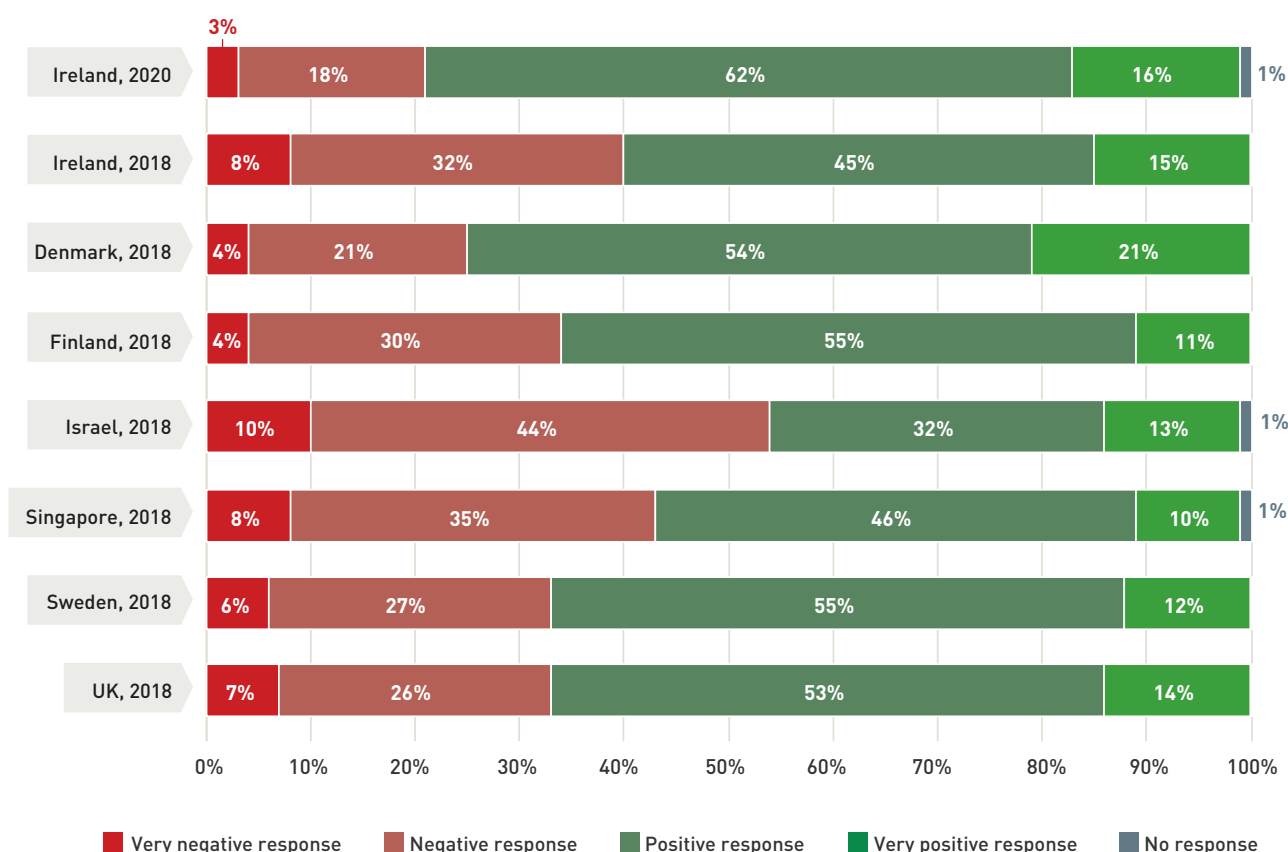


Figure 26

Comparison of responses to self-perceptions of science knowledge across small, advanced economies.^{88,89}

⁸⁸ Comparison uses data from agreement levels to the statement “In general, I feel well informed about science” from the SFI Barometer 2020 and responses to the question “How much do you, personally, know about science?” from the WGM 2018. For comparing our results with the WGM 2018 data, our response option ‘strongly disagree’ was equated with ‘nothing at all’, ‘disagree’ with ‘not much’, ‘agree’ with ‘some’, and ‘strongly agree’ with ‘a lot’ collapsed into one category corresponding to WGM’s single negative response option ‘very few’. As the WGM 2018 survey did not offer a neutral response option, our ‘neutral’ option could only be treated as missing data for this comparison.

⁸⁹ SFI 2020 $n = 973$, WGM 2018 (all countries) $n = 1000$

3.4 | Following Science News

The figure below shows that the highest proportion of a 2018 public who sought out science news or information in the last 30 days (Denmark, 65%) was more than 20% less than that of Ireland in 2020 (88%). This supports the idea that the majority of this dramatic increase in interest in 'science news' is likely to be due to the COVID-19 pandemic.

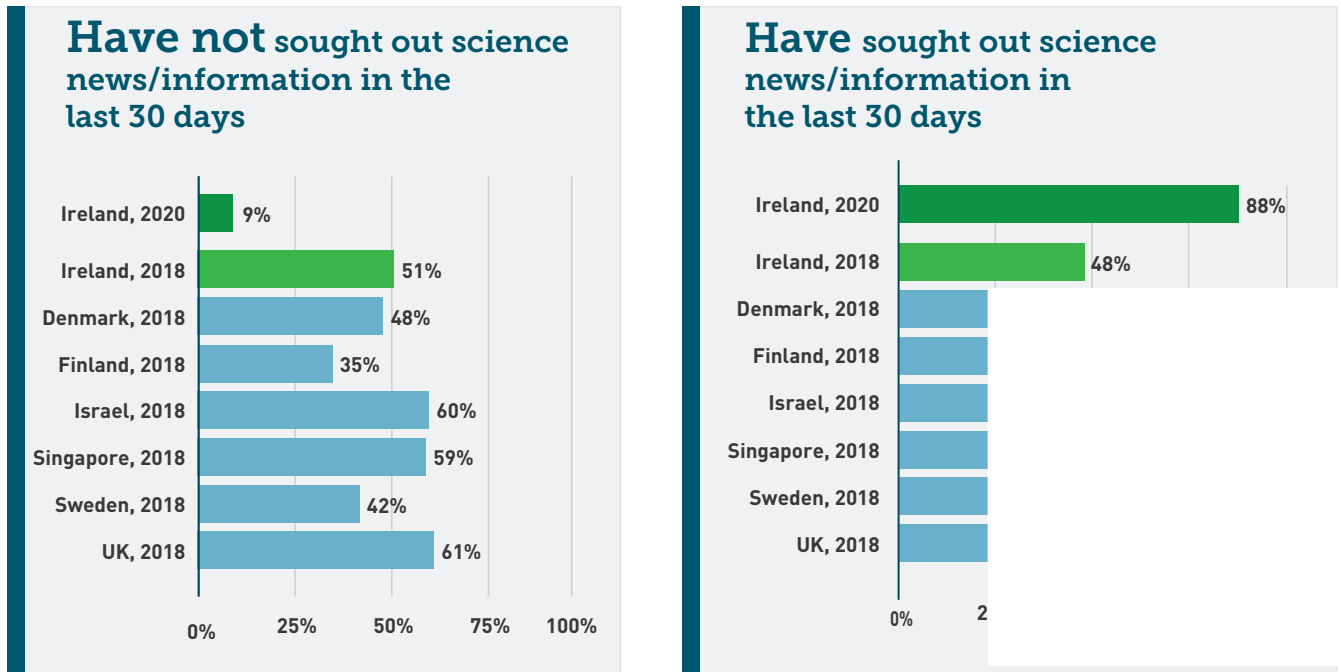


Figure 27.

Comparison between the proportion of publics in small, advanced economies who have sought out science/news information in the past 30 days.⁹⁰

⁹⁰ SFI 2020 $n = 931$, WGM 2018 (all countries) $n = 1000$



4 | Discussion

The findings from the SFI Science in Ireland 2020 Barometer are broadly consistent with the longstanding trends in public opinion research about science attitudes, which has consistently shown generally positive views about science and scientists.

Here, we find the vast majority of the Irish population view science positively in terms of its usefulness (95% agreement that science is useful) for society. This positive overall assessment of science is also echoed throughout the findings regarding public trust in science. We found that scientists in both public and private research institutions are trusted to be working for the public's benefit (77% and 58% respectively). Similarly, we found an increase from 2018 (+16%) in public confidence in the beneficial impacts of science in terms of 'fixing real problems of ordinary people'. This positive perception could help explain why the majority of the population (79%) see science funding as worthwhile, and that 'scientific research should guide public policy' (79%). However, a potentially important signal worth further investigation is that although only 1% of overall responses expressed distrust in publicly-funded scientific institutions to 'create useful knowledge', all of these expressions of distrust came from people from Other Ethnic Groups (21%).

The vast majority of the Irish population view science positively in terms of its usefulness (95% agreement that science is useful) for society.

While there was minimal public distrust in scientific institutions to ‘benefit the public’ (average 14%) and ‘create useful knowledge’ (average 6%), this trust faltered when it came to openness and honesty about funding. On this measure, there was a much higher average level of distrust (24%) and lower average level of trust across public and private scientific institutions compared to other trust dimensions, though this was to a greater extent for those that are privately-funded (49% trust compared to 60% for publicly funded institutions). These findings are consistent with trends found across other small, advanced economies.

Another key finding on the topic of trust is the difference between trust in ‘science’ per se and ‘scientists’. ‘Science’ was seen as more completely trustworthy than ‘scientists’ (+25%). In particular, there was greater distrust expressed by people in Dublin (25%), as opposed to other regions in /parts of Ireland in Ireland (2%).

Taken together, these results suggest that there was more trust in science as a field, than in the scientists populating an institution (but starting from a high base of trust in both).

The Irish public’s confidence in their scientific capabilities was weaker than their confidence in science. While there were broadly positive responses on self-reported ability to understand science (‘I feel capable of understanding science’, 79%), other variables indicating a confidence in science knowledge (56%), understanding (59%) and ability (61%) received positive responses from smaller majorities of the population. This pattern was most pronounced in responses to the survey question assessing the level of agreement with the statement ‘with hard work anyone can be a scientist’, which received the highest level of negative responses (28%).

There were also demographic factors at play in people’s personal engagement with science. Older people and people from Other Ethnic Groups were less likely to express confidence in self-perceived capabilities to understand and do science. In comparison, those who are highly educated were more likely to express confidence in these personal science-related capabilities. At the same time, it is noteworthy that, compared to 2018 data, self-reported science knowledge has increased (+10%). The current data marks Ireland as one of the most confident small, advanced economies in their self-reported science knowledge on comparisons with other countries in 2018.

There was no clear trend around the frequency with which the Irish population reported following science news (all categories containing at least 10%). This suggests that different social groups have differing levels of interest in science. No demographic variables were found to be predictive of interest in science news. However, a notable finding is the major increase in the proportion of the population who had accessed science news or information in the last 30 days since 2018 (+40%).



5

Conclusion

This research set out to reveal the engagement, level of understanding, views and experiences of a representative sample of the Irish population regarding science and scientific topics. Here, we provide headline findings related to the key objectives defined at the beginning of this report.

Engagement, level of understanding, views and experiences of the Irish public regarding science and scientific topics

With respect to science engagement, we found a high level of attitude variation across different dimensions of interest in science and public participation in science (see sections 2.7 and 2.5). There were also multifaceted findings with regards to understanding and knowledge of science (see section 2.6). While the majority of the public expressed confidence in their self-reported ability to understand science (79%), 'being a scientist' was not seen as particularly achievable (40% positive responses). Lack of confidence in self-reported abilities both to do and understand science was more prevalent amongst older generations, those who have lower levels of education, and amongst people from Other Ethnic Groups (see section 2.6.1).

Who values science in Ireland and why?

This research uncovered a wide base of support for science, with a strong perception of the importance and value of science to solve societal problems (see sections 2.1 and 2.5). This translated into a high level of support for science funding and its role as a key driver in policy-making (see sections 2.4). We found no noteworthy demographic predictors of overall positive attitudes about science (see section 2.1.3) or perceptions of the role of science in public policy (see section 2.4.1) on the basis of age, gender, education level, income or ethnicity.

What is the character of the Irish public's support, trust, and engagement in science during a public health crisis?

Within the Irish population, there was a high level of trust in scientists to work for the public's benefit (see section 2.2). However, trust in 'scientists' was slightly lower than in 'science' more generally (see section 2.1.2). Additionally, there was less trust indicated for scientific institutions to be transparent about funding sources.

In conclusion, this research has found a strong positive view of science in Ireland at the headline level, with important indications of differences in specific dimensions of science attitudes on the basis of age and ethnic groups. There is evidence of shifts in public opinions about science towards more positive attitudes and higher levels of interest since the most recent representative survey was conducted in Ireland in 2018. The next phase of this research will go back to the same respondents in 2021 to test the durability of these more positive attitudes over time.



6

6 | Acknowledgements

Qualia Analytics would like to express deep appreciation for the time and consideration of the hundreds of Irish residents who responded to this survey.

In addition, we are grateful for Science Foundation Ireland's commitment to listening to the Irish people, and the staff at SFI who contributed to the design of this project, including Tanja Calis (*Senior Executive, Education and Public Engagement*), Marina Mulligan (*Senior Executive, Education and Public Engagement*), Margie McCarthy (*Head of Education and Public Engagement*), Dr. Abigail Ruth Freeman (*Director, Science for Society Directorate*), Alva O'Cleirigh (*Head of Corporate Communications*), and Dr. Peter Clifford (*Head of Strategy*).

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Finally, Qualia Analytics' researchers contributing to this project include: Dr. Eric A. Jensen, Dr. Benjamin Smith, Dr. Aaron Jensen, Lars Lorenz, Axel Pflieger, and Sarah Noles.

Appendices



7 Appendix A: Methodology

This section provides supplementary detailed information on the methodology used throughout this research project. The processes described here reflect best methodological practice in top quality social science research, enabling precision, reliability, validity, and repeatability.

7.1 Literature Review

A crucial preparatory step in our survey design process was developing a comprehensive literature review. This review informed the SFI Barometer 2020 design by providing important context and highlighting relevant factors to consider in this round of the Barometer research. The literature review evaluated previous approaches to measuring public attitudes towards science (and demographics) through national surveys in other small, advanced economies, as well as the previous SFI Barometer 2015. Key ‘lessons learnt’ from the evaluation of these previous surveys were drawn out from this review and combined with the research team’s methodological expertise to design a survey in consultation with SFI to ensure the inclusion of their priority variables. Another consideration throughout the survey design was the inclusion of adequate opportunities for comparison of results to the previous Barometer conducted in 2015, as well as the Wellcome Global Monitor - a well-established and methodologically sound survey assessing public attitudes towards science and health across the world. This goal of comparative analysis was enabled by including identical survey items.

7.2 Cognitive Testing Process

After the survey design had been completed, it was subjected to a round of cognitive testing with respondents from a range of demographic characteristics including age, gender, ethnicity, education, socio-economic backgrounds, and geographic locations across Ireland (n=44). This involves testing the survey design amongst a small sample of people in order to expose potential issues with the reliability, validity, and measurement structure of any survey questions and response options that had not been previously empirically validated⁹¹. This also involved robust procedures to understand how respondents have interpreted words and concepts in the survey questions and response options, and to proactively address any confusion or comprehension issues that could arise for respondents to the main survey.

This process revealed four survey items with problematic elements to be addressed, two of which were substantive questions about public attitudes towards science/COVID-19, one of which was a pre-survey administrative item, and the last was a demographic question on household size. The issues with these questions were addressed based on the available piloting evidence.

⁹¹ For example, some of the questions used in the survey were selected from the Wellcome Global Monitor 2018: <https://wellcome.org/reports/wellcome-global-monitor/2018>, or other surveys deployed internationally in academic contexts by our survey designers.

7.2.1 Data Collection

7.2.1.1 Sampling

A stratified random sample was produced, using a full dataset of all Irish addresses as a base. This dataset is maintained by 'Eircode', the official service provider of the Eircode address system used in Ireland. Each Eircode is a unique combination of 7 numbers and letters, pointing directly to an individual address up to apartment level. In preparation for sampling, the dataset was filtered to exclude addresses marked as non-residential, commercial use, under construction, holiday home or vacant.

The sample was stratified based on the number of people living in each county, as reported by the 2016 Ireland Census. An initial sample of 10,000 respondents was taken. Additional samples of 9,999 (Wave 2) and 4,501 (Wave 3) had the strata weights adjusted based on the respondents by county at that point of data collection. The random selection of respondents per strata was done using the Python 'pandas.DataFrame.sample()' function, with a random seed generated through random.org. Only one postcard per sampled address was issued.

After completion of the Phase I survey, respondents were asked if they would be willing to receive an invitation for participation in the second round of the survey, in 2021.

Those who indicated they would be willing to receive invitations in Phase II will be re-contacted before the deployment of the follow up survey to obtain a core sample of the same respondents, enabling comparison of results from both phases.

7.2.1.2 Postcard Mailing

Postcards were mailed to individual addresses through An Post, the official postal service in Ireland. The An Post mass mailing platform allows uploading of custom address datasets and fully customised postcards.

In total, 24,500 postcards were sent out to Irish residential addresses. Within each household, the resident identified as over 15 years of age and to next have their birthday was asked to complete the online survey. Starting from the postcard, respondents could either scan a QR code or type a short URL to visit a survey specific page on the official SFI website⁹². This website was the entry point to the survey, as it provided a short introduction of the study and supported perceived legitimacy of the survey. Following detailed informed consent procedures and an option to be entered into the prize draw, respondents were taken through the platform to complete the survey. Participants took, on average, 26 minutes and 25 seconds to complete the survey.



Figure 28.

Front and rear of the invitation postcard.

⁹² Since the website was publicly accessible, individuals who had not been included in the postal sample could also respond to the survey. For this reason, respondents were asked to indicate if they had received a postcard invitation. People who did not receive postcards made up 3% of the final sample.

7.2.1.3 Other Response Pathways

On the survey webpage, respondents could self-report whether they had received a postcard or not. Since the website was publicly accessible, individuals who had not been included in the postal sample could also respond to the survey. The website was actively promoted with a tweet on the official SFI account. In addition to having respondents self-report on their response pathway in terms of whether they had received a postcard or not, respondents were asked for their Eircode. These codes could then be matched to each sample to identify whether a respondent received a postcard at their address, and at which of the three waves the postcard was received.

7.2.1.4 Response Rate

The Phase I survey ran between 13th July 2020 and 13th September 2020, yielding N=1,018 responses which had a completion rate for non-demographic questions greater than 10% and a complete set of responses to demographic questions crucial for weighting (those not meeting these criteria were excluded from the final sample). Within the total sample, n=1,000 responses were above 65% completion. The 10% threshold included additional cases which provided slightly larger samples for the questions that respondents with completion rates between 10% and 65% did answer. The mean and median completion rate in the final sample (N=1,018) was 95% and 100%, respectively. Taking the number of people that were sent postcards in the mail as a base (100%), this equates to a valid response rate of about 4.2%. This response rate is comparatively higher than the rate attained for comparable national survey research in Canada about COVID-19, using the same postcard mailing method. A small minority of 3% of these respondents did not explicitly report receiving postcards, and instead responded to the survey directly through the SFI website.

While it is possible that people may have been more likely to respond due to pre-existing positive notions about science, a 'ground truth' about the proportion of the Irish population interested in science would be needed to compare to our data in order to fully explore this possibility. However, as interest in science is not measured in the census, we cannot make this comparison, or make any inferences about potential non-response bias based on interest in science. Arguably, the most relevant demographic variable measure included in the census we could compare to with regards to this issue is education level. As can be seen in Table 12 in Section 4, people

whose highest education level was 'No formal education/training', 'Primary education', 'Lower Secondary', 'Upper Secondary', 'Technical or Vocational', and 'Advanced Certificate/Completed Apprenticeship' were underrepresented. In contrast, people whose highest education level was 'Higher Certificate', 'Ordinary Bachelor Degree or National Diploma', 'Honours Bachelor Degree/Professional qualification or both', 'Postgraduate Diploma or Degree', and 'Doctorate (Ph.D.) or higher' were overrepresented. This means that people with education levels equal to or higher than 'Higher Certificate' were more likely to respond than those with lower levels of education. However, these differences were adjusted for in the weighting process (see section 7.2.3).

7.2.2 Data Management

The raw data was first organised in a way which alleviates weighting and subsequent analyses. Further, a preliminary analysis of the socio-demographic variables revealed that a critical portion of respondents chose not to indicate their date of birth. Considering age is a crucial variable for weighting, these missing values needed to be estimated. This was done by identifying correlations between missing values and responses to other questions, and establishing a robust model for estimating age data where it was missing.

7.2.3 Sample Weighting

In order to enhance the precision of the survey results, weighting was applied to the data. Unweighted results refer to the responses of participants who actually responded to the survey. While these results are important, they do not provide a nationally representative picture of the population, as the mix of people who responded to the survey are not directly reflective of the wider Irish public in terms of socio-demographic factors such as gender, age, and ethnic background. In other words, some social groups may be over- or underrepresented in the sample. Therefore, we have weighted all valid cases by using raking - a form of calibration weighting. This involves comparing the sampled proportions of socio-demographic variables with those from the 2016 Irish census, based on which each respondent receives an individual weight. The weights boosted responses from underrepresented groups and put less emphasis on responses from overrepresented groups. The variables used for weighting included geographic location, sex, age, household size, ethnicity and level of education.

Table 12.

Comparison of unweighted, weighted, and Irish census 2016 socio-demographic distributions.

	Unweighted Count	Unweighted Column N %	Weighted Count	Weighted Column N %	Census Count	Census Column N %
Age						
1	147	14.4%	88	8.6%	399615	8.5%
2	308	30.3%	213	21.0%	973072	20.8%
3	190	18.7%	188	18.5%	892696	19.1%
4	221	21.7%	253	24.8%	1153312	24.7%
5	108	10.6%	170	16.7%	774206	16.8%
6	33	3.2%	84	8.3%	324096	6.9%
7	9	0.9%	19	1.8%	96974	2.1%
Eight or more	2	0.2%	3	0.3%	59479	1.3%
Total	1018	100%	1018	100%	4676648	100%
Sex						
Male	498	48.9%	500	49.1%	2354428	50.3%
Female	520	51.1%	518	50.9%	2407437	51.7%
Total	1018	100%	1018	100%	4761865	100%
Ethnic Background						
Other, including mixed background	22	2.2%	14	1.3%	48548	1.0%
White or White Irish	967	95.0%	973	95.5%	3428934	73.5%
Black or Black Irish	5	0.5%	11	1.1%	39437	0.8%
Asian or Asian Irish	24	2.4%	20	2.0%	72140	1.5%
Total	1018	100%	1018	100%	3589059	100%
County						
CARLOW	12	1.2%	12	1.2%	56932	1.2%
CAVAN	15	1.5%	16	1.6%	76176	1.6%
CLARE	32	3.1%	26	2.5%	118817	2.5%
CORK	123	12.1%	116	11.4%	542868	11.6%
DONEGAL	36	3.5%	34	3.4%	159192	3.4%
DUBLIN	538	53.2%	286	28.0%	1347359	28.8%
GALWAY	91	8.9%	56	5.4%	258056	5.5%
KERRY	24	2.4%	31	3.0%	147797	3.1%
KILDARE	51	5.0%	48	4.7%	222504	4.7%
KILKENNY	23	2.3%	21	2.1%	96232	2.1%
LAOIS	13	1.3%	18	1.8%	84697	1.8%
LEITRIM	6	0.6%	7	0.7%	32044	0.7%
LIMERICK	36	3.5%	42	4.1%	194899	4.2%
LONGFORD	8	0.8%	9	0.9%	40873	0.9%
LOUTH	15	1.5%	28	2.7%	128884	2.7%
MAYO	15	1.5%	28	2.7%	130597	2.8%
MEATH	40	3.9%	42	4.2%	195044	4.2%
MONAGHAN	11	1.1%	13	1.3%	61386	1.3%
OFFALY	7	0.7%	17	1.7%	77951	1.7%
ROSCOMMON	7	0.7%	14	1.4%	64544	1.4%
SLEIGH	11	1.1%	14	1.4%	65535	1.4%
TIPPERARY	34	3.3%	35	3.4%	159553	3.4%
WATERFORD	20	2.0%	25	2.4%	116178	2.4%
WESTMEATH	15	1.5%	16	1.6%	88770	1.9%
WEXFORD	28	2.8%	32	3.2%	149722	3.2%
WICKLOW	37	3.6%	31	3.0%	143425	3.0%
Total	1018	100%	1018	100%	4761865	100%
Education						
No formal education/training	4	0.4%	50	5.0%	52214	1.1%
Primary education	8	0.8%	68	6.7%	334284	7.1%
Lower Secondary	67	6.6%	174	17.1%	449786	9.6%
Upper Secondary	113	11.1%	217	21.3%	573643	12.3%
Technical or Vocational	43	4.2%	84	8.2%	271532	5.8%
Advanced Certificate/Completed Apprenticeship	47	4.6%	56	5.5%	182518	3.9%
Higher Certificate	70	6.9%	58	5.7%	153351	3.3%
Ordinary Bachelor Degree or National Diploma	117	11.5%	83	8.1%	237117	5.1%
Honours Bachelor Degree/Professional qualification or both	217	21.3%	122	12.0%	331293	7.1%
Postgraduate Diploma or Degree	263	25.8%	96	9.5%	284107	6.1%
Doctorate (Ph.D.) or higher	51	5.0%	9	0.9%	28750	0.6%
Total	1018	100%	1018	100%	2896384	100%

7.2.4 Data Analysis

In this report, we mainly provide descriptive statistics, setting out clearly the distributions and percentages of the population across response options for each variable. Medians and/or modes are sometimes given to describe the central tendency, along with margins of error for each response option. Furthermore, we also provide further explanatory or inferential analyses where notable correlations or phenomena were found relating to certain kinds of attitudes or responses and demographic characteristics including gender, age, education level, ethnicity, household income and location. Here, chi-square and Mann-Whitney U tests were performed to identify statistically significant differences between women and men, different age groups, ethnic categories, and locations. Statistically significant results were further investigated for effect sizes in order to ascertain the magnitude of the identified

differences or associations. Statistically significant results are included where the effect size r was close to or more than moderate - equal to or above 0.3, meaning at least 6.3% of the variability in one measure can be accounted for if the values for the other measure are known. These results are described throughout the report as 'noteworthy'. Where applicable, Spearman's Rho was used to examine correlations with age, level of education, and household income.

Additional analyses included comparing the data from this study with similar data on attitudes towards science in Ireland from the 2018 Wellcome Global Monitor. The 2018 Wellcome Global Monitor data which was conducted globally, allowed for longitudinal assessments of indicators and also enabled us to make comparisons between Ireland and other similar small, advanced economies, including Denmark, Finland, Israel, Singapore, Sweden, and the UK. However, these

analyses were conducted in consideration of their limitations. Comparability may be limited by slight discrepancies between the studies in some question wording, the type of questions (e.g., simple single-response and Likert-type), and the number of points in the Likert items. For a summary of the transformations required for these analyses, see Figure 29. The latter issue resulted in ‘shifting’ our neutral responses into the ‘missing’ category as the items from the other studies to compare with did not include neutral response options. In turn, the originally calculated distributions of responses in percent differ from those in the comparisons.

SFI Barometer 2020		WGM 2018	SFI Barometer 2020		WGM 2018
Strongly disagree	→	Nothing at all	Strongly disagree	→	Very few
Disagree	→	Not much	Disagree	→	Some
Neutral	X	Missing	Neutral	→	Most
Agree	→	Some	Agree	→	
Strongly agree	→	A lot	Strongly agree	→	
Completely distrust	→	Not at all	Never	→	No
Partially distrust	→	Not much	Once		Yes
Neither distrust nor trust	X	Missing	2-3 times		
Partially trust	→	Some	Once a week	→	
Completely trust	→	A lot	2-3 times a week		
			4-6 times a week		
			Daily		

Figure 29.

Schematic of variable transformations for comparisons with data from the Wellcome Global Monitor 2018.

7.3 Demographic Profile

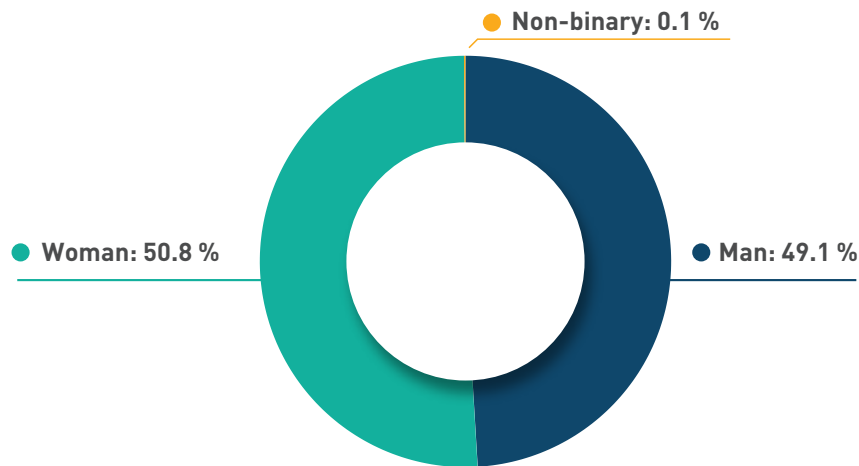
In this section, we set out the characteristics of the respondents to this survey⁹³.

7.3.1 Gender

Figure 30 below shows the distribution of respondents across gender categories. The majority of people self-identified as women (50.8%) and men (49.1%), with 0.1% (n=1) identifying as non-binary.

Due to the fact that only one person identifying as non-binary responded to the survey, no results (stand-alone or comparative) could be reported which would be representative of this socio-demographic group. Data from non-binary respondents could not be weighted, as the Irish census in 2016 only asked about respondents' sex, with 'male' and 'female' as the only response options. For representative results about Irish non-binary people and comparisons to be reported in future survey research, gender identity - including the inclusion of the 'non-binary' response option - would need to be included within the Irish census.

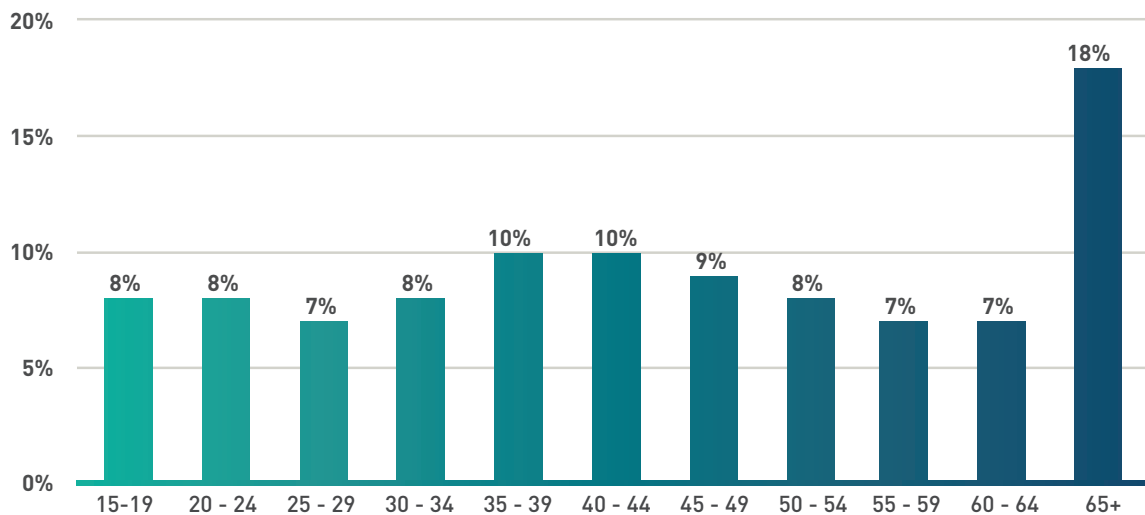
⁹³ These graphs and figures show the distributions of the respondent population following the application of sample weights so that the results are representative of the population. These numbers are therefore largely a presentation of the distribution of the Irish population across demographic characteristics according to the 2016 Irish census, given that sample weights were applied to achieve alignment between the sample and the census.

**Figure 30.**

Gender distribution of respondents - "What is your gender?".

7.3.2 Age

The population represented in this study is relatively evenly spread across age categories. The most populous age category is 65+. This age category is more densely populated due to the inclusion of all individuals over 65, compared to the other categories which have a four-year age range. The age brackets with the next highest proportion of the population are 35-39 and 40-44. The mean age was 45, and the median was 44.

**Figure 31.**

Age distribution of respondents - "When were you born?".

7.3.3 Ethnic and Cultural Background

The large majority of the population in Ireland are White or White Irish (95.6%), with 2% Asian or Asian Irish. The ethnic group with the next highest proportion of the population represented is 'Other' (1.4%), followed by Black or Black Irish (1.1%).

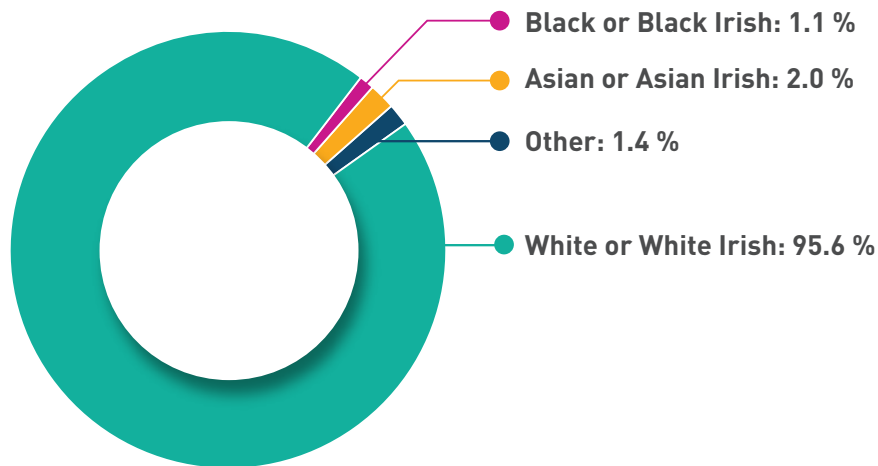
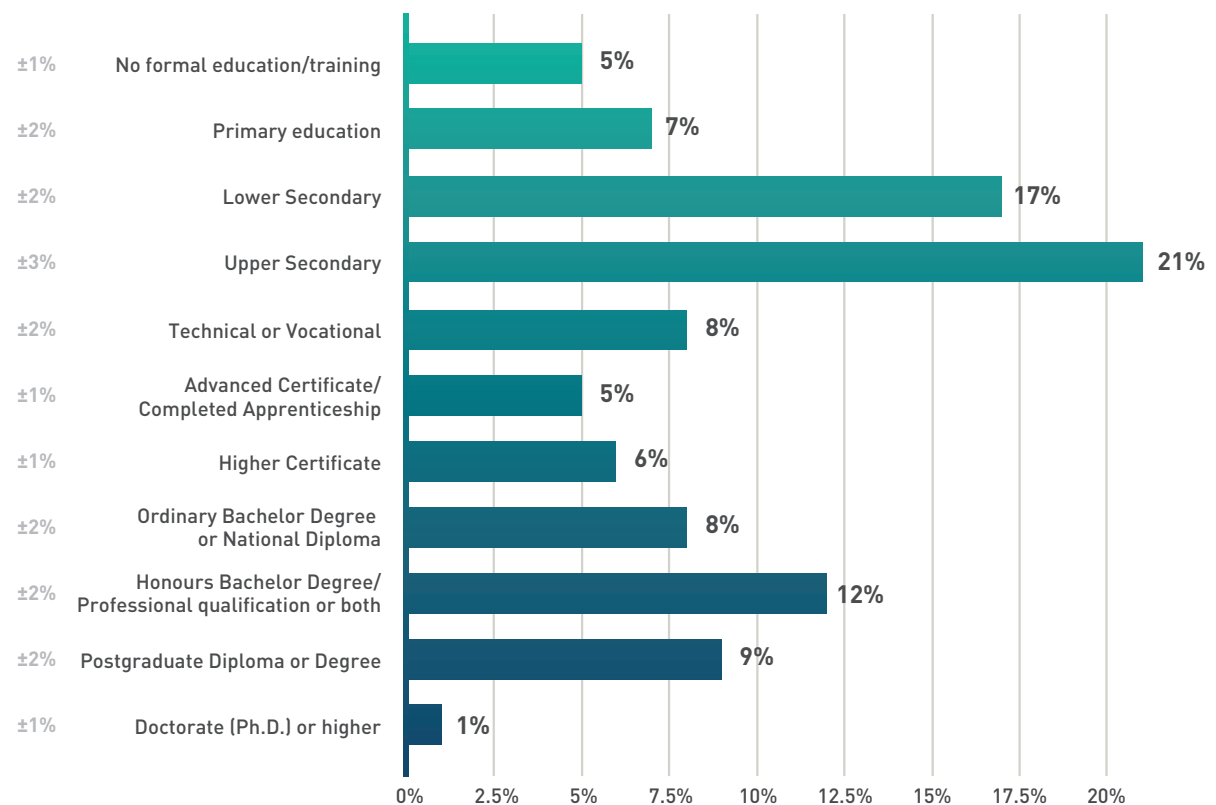


Figure 32.

Distribution of respondents across ethnic and cultural background - "What is your ethnic or cultural background?".

7.3.4 Education

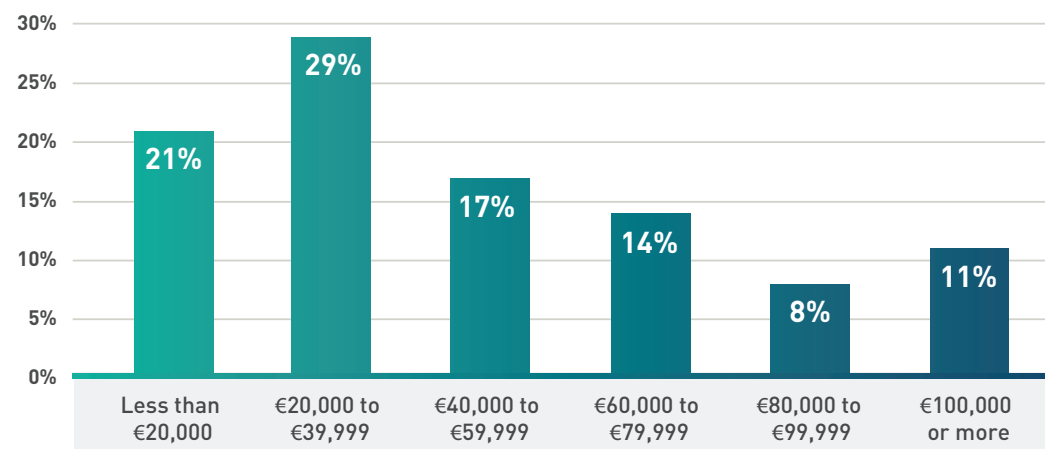
This section shows the distribution of the population represented in this study across the highest levels of education or training completed. As can be seen, the modal category is Upper Secondary education, with 21% of the population reporting this as their highest level of education. The next most populous category is Lower Secondary, with 17% of the population having stopped education or training after this level, followed by Honours Bachelor Degree/Professional qualification (12%). The smallest category was Doctorate (Ph.D.) or higher (1%).

**Figure 33.**

Distribution of respondents across the highest level of education or training completed - “What is the highest level of education or training you have completed so far?”.

7.3.5 Household Income

The final demographic category we provide results for is household income, to indicate the socio-economic landscape of Ireland. Figure 34 shows that the most populous income category is €20,000 - €39,999 with 29% of the population - this was also the median category - followed by ‘Less than €20,000’ (21%).

**Figure 34.**

Distribution of respondents across household income - “What is your total gross annual household income?”.

8 Appendix B: Survey Design

8.1 Informed Consent

1. Why participate in this survey?

The survey asks about your views on important issues in Ireland today. What kind of information do you need on these issues and where do you get this information? The government agency, SFI, is seeking answers to these questions and wants to make sure your voice is heard. Questions about the purposes of this survey and use of the data collected can be directed to barometer@sfi.ie. The company running this survey on behalf of SFI is Qualia Analytics (qualiaanalytics.org). Any queries or concerns regarding your participation in this survey can be answered by emailing survey@qualiaanalytics.org.

2. Why should I participate?

Your views will help to guide the future work of the scientific and wider community in Ireland. As a 'Thank You' for participating, you will be given the opportunity to be entered into a prize draw for one of ten €200 gift vouchers on completion of this survey.

3. How much time is involved?

The main part of the survey takes about 20-25 minutes and the second part about 8-10 minutes to complete. On completion, you have the option to further participate in Phase II of the survey, which will take place in 2021.

4. What happens to the information you provide?

Following your consent, your personal information will remain strictly confidential and will only be used for the purposes of this research project. Your personal information will never be shared with any third parties (including Government agencies). After your data are fully anonymised, they may be published and will be used for research reports and publications.

8.1.2 Agreement to Participate

Please read the following statements below:

- I confirm I am 15 years of age or older.
- I understand that my responses to the following survey will be confidentially stored and used for research purposes only.
- I understand the information I provide about myself is confidential.
- My identity will not be disclosed for commercial use by a third party or made public without my explicit consent.
- I understand that my participation is voluntary, and I can withdraw at any time and ask for any personally identifiable information to be deleted.
- I agree I have received adequate information about my participation in this survey and understand what will happen to the information I provide.

Q0CO **Please indicate whether you understand and agree with the statements above, and are willing to participate in this survey: [checkbox]**

Yes, I understand, agree, and am willing to participate in this survey.

*Shown if **Yes, I understand, agree, and am willing to participate in this survey.** is NOT selected in **Q0CO**.*

If you would like clarification about any of the information above before starting, or if you have difficulties completing this form, please email survey@qualiaanalytics.org. If you do not agree with any of the statements above, you will not be able to proceed with the survey. Thank you for your consideration.

Always displayed

Qualia Analytics (qualiaanalytics.org) is a data processor that is fully compliant with the EU General Data Protection Regulation (GDPR). You may view the Qualia Analytics privacy policy [here](#).

8.2 Prize Draw

Providing your contact information will enter you into a draw with one of ten €200 gift vouchers. We will notify winners by all provided contact options.

Also, if you are unable to complete the entire survey now, for any reason, it's okay - your progress is saved. We can send you a message if you're willing to come back later.

The contact information you provide will not be shared with any third parties and will only be used for the purposes of this survey.

Q0PD Do you want to be entered in the prize draw? [Radio box]

Yes, I'd like to be entered in the prize draw

No, I don't want to be entered in the prize draw

8.2.1 Contact Information

Q0FN First name [text line]

Q0LN Last name [text line]

Q0EM Email address [text line, email]

Q0EM Phone number [text line, phone]

(Please write the full phone number, including country code. Note that we will only send up to 4 text messages and will never call you.)

8.4 Demographic Questions

Q1 What is your Eircode? [Text line]

Your Eircode will only be used for analytical purposes.

Q2 Do you live at this location most of the time? [Dropdown]

[1] Yes

[2] No

[-97] Prefer not to say

[-95] Unsure

*Shown if **No** selected in Q2*

Q2.1 Do you live in Ireland most of the time? [Dropdown]

[1] Yes, I live in Ireland most of the time

[2] No, I live outside of Ireland most of the time

[-97] Prefer not to say

[-95] Unsure

*Shown if **Yes, I live in Ireland most of the time** selected in Q3*

Q2.2 In what county do you spend the most time? [Dropdown]

Start typing to limit results. Select the best match.)

- | | |
|----------------|----------------|
| [1] Antrim | [17] Leitrim |
| [2] Armagh | [18] Limerick |
| [3] Carlow | [19] Longford |
| [4] Cavan | [20] Louth |
| [5] Clare | [21] Mayo |
| [6] Cork | [22] Meath |
| [7] Derry | [23] Monaghan |
| [8] Donegal | [24] Offaly |
| [9] Down | [25] Roscommon |
| [10] Dublin | [26] Sligo |
| [11] Fermanagh | [27] Tipperary |
| [12] Galway | [28] Tyrone |
| [13] Kerry | [29] Waterford |
| [14] Kildare | [30] Westmeath |
| [15] Kilkenny | [31] Wexford |
| [16] Laois | [32] Wicklow |

Q5 What best describes the area you live in most of the time? [Dropdown]

- [1] Urban area (e.g. city)
- [2] Suburban area (e.g. outside of a city)
- [3] Rural area (e.g. in the countryside or a small village)
- [4] None of the above
- [-97] Prefer not to say
- [-95] Unsure

8.5 Household Size

Q6 How many people, including you, currently reside in this household? [Text line]

We are asking about household size to understand your living situation. This will be used for reporting/analytical purposes.

Shown if 'postcard' tag present in survey link. Postcard tag depends on whether respondents selected if they received a postcard or not on the SFI website:

<https://www.sfi.ie/engagement/survey/>.

Q7 Of those currently residing in this household, how many are less than 15 years of age? [Text line]

8.6 Education

Q8 What is the highest level of education or training you have completed so far? [Radio box]

- [1] No formal education/training
- [2] Primary education
- [3] Lower Secondary
- [4] Upper Secondary
- [5] Technical or Vocational
- [6] Advanced Certificate/Completed Apprenticeship
- [7] Higher Certificate
- [8] Ordinary Bachelor Degree or National Diploma
- [9] Honours Bachelor Degree/Professional qualification or both
- [10] Postgraduate Diploma or Degree
- [11] Doctorate (Ph.D.) or higher

Definitions displayed alongside Q8:

- Primary education (NFQ Levels 1 or 2) FETAC Level 1 or 2 Cert. or equivalent
- Lower Secondary (NFQ Level 3) Junior/Inter/Group Cert., FETAC Level 3 Cert., FÁS Introductory Skills, NCVA Foundation Cert. or equivalent
- Upper Secondary (NFQ Levels 4 or 5) Leaving Cert. (including Applied and Vocational programmes) or equivalent
- Technical or Vocational (NFQ Level 6) FETAC Level 4/5 Cert., NCVA Level 1/2, FÁS Specific Skills, Teagasc Cert. in Agriculture, CERT Craft Cert. or equivalent
- Advanced Certificate/Completed Apprenticeship (NFQ Level 6) FETAC Advanced Cert., NCVA Level 3, FÁS National Craft Cert., Teagasc Farming Cert., CERT Professional Cookery Cert. or equivalent
- Higher Certificate (NFQ Level 6) NCEA/HETAC National Cert. or equivalent
- Ordinary Bachelor Degree or National Diploma (NFQ Level 7)
- Honours Bachelor Degree/Professional qualification or both (NFQ Level 8)
- Postgraduate Diploma or Degree (NFQ Level 9) Postgraduate Diploma, Masters Degree or equivalent
- Doctorate (Ph.D.) or higher (NFQ Level 10)

*Shown if **Primary education, Lower Secondary, Upper Secondary, Technical or Vocational, Advanced Certificate/Completed Apprenticeship, Higher Certificate, Ordinary Bachelor Degree or National Diploma, Honours Bachelor Degree/Professional qualification or both, Postgraduate Diploma or Degree, Doctorate (Ph.D.) or higher** selected in Q8*

Thinking about your education, did you personally learn about **science** in:

Q8.1 Primary school [Dropdown]

- [1] Yes
- [2] No
- [3] Never attended this type of class at primary school
- [-95] Unsure

*Shown if **Lower Secondary, Upper Secondary, Technical or Vocational, Advanced Certificate/Completed Apprenticeship, Higher Certificate, Ordinary Bachelor Degree or National Diploma, Honours Bachelor Degree/Professional qualification or both, Postgraduate Diploma or Degree, Doctorate (Ph.D.) or higher** selected in Q8*

Q8.2 Secondary school [Dropdown]

- [1] Yes
- [2] No
- [3] Never attended this type of class at secondary school
- [-95] Unsure

*Shown if **Higher Certificate, Ordinary Bachelor Degree or National Diploma, Honours Bachelor Degree/Professional qualification or both, Postgraduate Diploma or Degree, Doctorate (Ph.D.) or higher** selected in Q8*

Q8.3 Higher education (e.g. University) [Dropdown]

- [1] Yes
- [2] No
- [3] Never attended this type of class during higher education
- [-95] Unsure

8.7 Employment & Income

Q12 How would you describe your current working status? [Radio box]

- [1] Working for payment or profit
- [2] Looking for first regular job
- [3] Unemployed / temporarily unable to work
- [4] Student pupil
- [5] Looking after home/family
- [6] Retired from employment
- [7] Unable to work due to permanent sickness or disability
- [-97] Prefer not to say
- [-98] Other (please specify)

Q13 What is your total gross annual household income? [Dropdown]

(This should be “gross” income, so please estimate without consideration for any taxes or expenses)

- [1] Less than €20,000
- [2] €20,000 to €39,999
- [3] €40,000 to €59,999
- [4] €60,000 to €79,999
- [5] €80,000 to €99,999
- [6] €100,000 or more
- [-97] Prefer not to say

Q14 Please indicate what you can usually afford with your household income:[Radio box]

- [1] Less than basic needs
- [2] Basic needs
- [3] Some needs but not all
- [4] All needs
- [5] All needs and more
- [6] Unsure

8.8 Age, Sex & Gender

Q15 When were you born? [Date of Birth]**Q16 What sex were you assigned at birth? [Dropdown]**

(We are asking about biological sex [for example, on your birth certificate] to compare to the Irish Census.)

- [2] Female
- [1] Male
- [3] Intersex
- [-97] Prefer not to say

Q17 What is your gender? [Dropdown]

(We are asking about gender to understand how you self-identify. This will be used for reporting/analytical purposes.)

- [2] Woman
- [1] Man
- [3] Non-binary
- [-96] A gender not listed here
- [-97] Prefer not to say

Q18 What is your ethnic or cultural background? [Dropdown]

- [1] White or White Irish
- [2] Black or Black Irish
- [3] Asian or Asian Irish
- [4] Other, including mixed background
- [-97] Prefer not to say

*Shown if **White or White Irish** selected in 8.4. [Applies to the question(s) 8.5.]*

Q18.1 Please specify your White background: [Dropdown]

- [1] White—Irish
- [2] White—Irish Traveller
- [3] White—Any other White background

*Shown if **Black or Black Irish** selected in 8.4. [Applies to the question(s) 8.6.]*

Q18.2 Please specify your Black background: [Dropdown]

- [2] Black or Black Irish—African
- [3] Black or Black Irish—Any other Black background

Shown if **Asian or Asian Irish** selected in **8.4**. [Applies to the question(s) 8.7.]

Q18.3 Please specify your Asian background: [Dropdown]

- [1] Asian or Asian Irish—Chinese
- [3] Asian or Asian Irish—Any other Asian background

8.9 Perspective and Understanding of Science Questions

Q21 When you think of SCIENCE, what are the first things that come to mind?
[Textarea] (Please be as detailed as possible)

[page break]

Q22 For each pair of words below, please select the point between them that you think best describes SCIENCE / SCIENTISTS.

I think SCIENCE is...

	[3]	[2]	[1]	[0]	[-1]	[-2]	[-3]	
	3	2	1	0	-1	-2	-3	
Essential								Unnecessary
Fascinating								Uninteresting
Inspiring								Depressing
Stimulating								Dull
Important								Unimportant
Useful								Useless
Beneficial								Harmful
Honest								Dishonest

[Randomized in order and polarity]

[page break]

Q23 For each pair of words below, please select the point between them that you think best describes SCIENCE / SCIENTISTS.

I think SCIENTISTS are...

	[3]	[2]	[1]	[0]	[-1]	[-2]	[-3]	
	3	2	1	0	-1	-2	-3	
Essential								Unnecessary
Fascinating								Uninteresting
Inspiring								Depressing
Stimulating								Dull
Important								Unimportant
Useful								Useless
Beneficial								Harmful
Honest								Dishonest

[Randomized in order and polarity]

Q24 In general, would you say you distrust or trust the following:	Partially distrust	Completely distrust	Neither distrust nor trust	Partially trust	Completely trust	Not applicable / No Opinion
	[-2]	[-1]	[0]	[1]	[2]	[-96]
Science						
Scientists						

[Randomize order]

[page break]

8.11 Ireland Trust

Q25 How much, in general, do you distrust or trust each of the following?	Partially distrust	Completely distrust	Neither distrust nor trust	Partially trust	Completely trust	Not applicable / No Opinion
	[-2]	[-1]	[0]	[1]	[2]	[-96]
Scientists in Ireland						
Journalists in Ireland						
The Government in Ireland						
Politicians in Ireland						
Public health experts in Ireland						
Medical professionals (e.g. doctors) in Ireland						
People in your neighbourhood						

[Randomize order]

[page break]

8.12 Trust in Scientists (publicly funded)

Q26 How much do you distrust or trust scientists at publicly funded institutions in Ireland (such as universities) to:	Partially distrust	Completely distrust	Neither distrust nor trust	Partially trust	Completely trust	Not applicable / No Opinion
	[-2]	[-1]	[0]	[1]	[2]	[-96]
Publicly communicate accurate information about their research.						
Create knowledge that is useful.						
Do their work with the intention of benefiting the public.						
Be open and honest about who is paying for their work.						
Be honest about how they're using public funding.						

[Randomize order]

[page break]

8.13 Trust in Scientists (privately funded)

Q27 How much do you distrust or trust scientists at private institutions in Ireland (such as companies) to:	Partially distrust	Completely distrust	Neither distrust nor trust	Partially trust	Completely trust	Not applicable / No Opinion
	[-2]	[-1]	[0]	[1]	[2]	[-96]
Publicly communicate accurate information about their research.						
Create knowledge that is useful.						
Do their work with the intention of benefiting the public.						
Be open and honest about who is paying for their work.						
Be honest about how they're using public funding.						

[Randomize order]

[page break]

Q28 To what extent do you disagree or agree with each of the following statements?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not applicable / No Opinion
	[1]	[2]	[3]	[4]	[5]	[-96]
With hard work, anyone can be a scientist.						
Nearly everyone is capable of doing science, if they work at it.						
Some people will always struggle with science.						
Science is too difficult to understand.						
Science has no relation to what I experience in the real world.						
Learning science changes my ideas about how the world works.						
Science is useful in solving everyday problems in my life.						
It is important to me that I am informed about science.						

[Randomize order]

[page break]

Q29 To what extent do you disagree or agree with each of the following statements?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not
	[1]	[2]	[3]	[4]	[5]	[-96]
I am the type of person who can be a scientist.						
I am the type of person who can do science.						
I am not the type of person who can understand science.						
I am the type of person who will always struggle with science.						
Science is not for me.						
I have a good understanding of science.						
I feel capable of understanding science.						
In general, I feel well informed about science.						

[Randomize order]

[page break]

Some people seem to follow what's going on in government and politics most of the time, whether there's a major news event going on or not. Others aren't that interested.

Q30 Within the last 30 days, how often have you been following what's going on in:	Never	Once	2-3 times	Once a week	2-3 times a week	4-6 times a week	Daily	Prefer not to say	Unsure
	[?]	[1]	[2]	[3]	[4]	[5]	[6]	[?]	[-95]
Government and politics									
News in general									
Health news									
Technology news									
Art and style news									
Popular entertainment news									
Sport news									
Science news									

[Fix 'Government and politics' and 'News in general'. Randomize order of other items]

[page break]

Q31 To what extent do you disagree or agree with each of the following statements?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not
	[1]	[2]	[3]	[4]	[5]	[-96]
Public money spent on science is well worth spending.						
The government should spend more money on scientific research.						
The general public should have a say in how science develops.						
This country is spending too much money on science.						
The government should look for scientific evidence when deciding how to solve problems.						
Scientific evidence should guide government policy.						
Scientific research should be a priority for our nation.						
Scientific discoveries are doing more harm than good.						

[Randomize order]

[page break]

Q32 To what extent do you disagree or agree with each of the following statements?	Strongly Disagree	Disagree	Neutral	Agree		Not
	[1]	[2]	[3]	[4]	[5]	[-96]
Scientific research is a priority for me.						
Science is failing to help with the real problems of ordinary people.						
Science makes very little difference for fixing real problems of ordinary people.						
People who will be directly affected by scientific research should have a say in how it develops.						
Scientists have a professional responsibility to talk about research findings with the public.						
Science is making the world a better place.						
Science is too concerned with theory to be useful to government when making policy decisions.						
[Randomly display only one of the following:]						
We need more gender diversity in science.						
We need more ethnic diversity in science.						

[Randomize order]

[page break]

8.19 Continuation

Almost finished! Thank you so much for your participation so far. The remaining questions will include a focus on your situation and perspectives relating to the novel coronavirus (COVID-19) crisis. We estimate only 8-10 minutes remaining to complete this survey.

Q0CN Are you willing to continue with this survey? [Radio box]

[2] Yes, I can answer some more questions now

[3] No, but I would like to continue later

[1] No, I do not want to continue with more questions

*Shown if **No, but I would like to continue later** selected in Q0CN*

Only contact fields which have not been completed previously are shown.

8.19.1 Contact Information

Q0FN First name [text line]

Q0LN Last name [text line]

Q0EM Email address [text line, email]

Q0EM Phone number [text line, phone]

(Please write the full phone number, including country code. Note that we will only send up to 4 text messages and will never call you.)

*All following pages are only shown if **Yes, I can answer some more questions now** selected in Q0CN*

[page break]

8.20 Coronavirus/COVID-19 Questions

Q33	Not at all Familiar	Slightly Familiar	Somewhat Familiar	Moderately Familiar	Extremely Familiar	Not applicable / No Opinion	Unsure
	[1]	[2]	[3]	[4]	[5]	[-96]	[-95]
Are you familiar with the Coronavirus (COVID-19)?							

*Shown if **any option** selected in Q33*

About Coronaviruses (COVID-19)

Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19. COVID-19 is the infectious disease caused by the most recently discovered coronavirus. COVID-19 is now a pandemic affecting many countries globally.

[page break]

8.21 Employment Changes (COVID-19)

Q34 Which of the following best describes your work or employment before Coronavirus (COVID-19)? [Checkbox (Grid)]

(Select all that apply)

- [1] Retired
- [2] Student
- [3] Self-employed
- [4] Looking for paid work
- [5] Working in paid employment
- [6] Working in temporary or seasonal job
- [7] Working in 'gig economy' (e.g., rideshare, food delivery)
- [8] Unpaid family or household work
- [-98] Other (please specify)

*Shown if **Self-employed, Working in paid employment, Working in temporary or seasonal job, Working in 'gig economy' (e.g., rideshare, food delivery)** selected in Q34*

Q34.1 Do any of the following work-related situations apply to you because of the Coronavirus (COVID-19) situation? [Checkbox (Grid)]

- [1] I have been laid off, furloughed or my job has been suspended
- [2] My work hours have been reduced
- [3] I have started working from home
- [4] I have lost my job
- [5] None of these situations apply
- [-98] Other (please specify)

Q36 Do any of the following health-related situations apply to you because of the Coronavirus (COVID-19)? [Checkbox (Grid), randomised 1-3]

- [1] Have postponed major medical treatment.
- [2] Mental health negatively affected.
- [3] Experienced severe tensions in the household.
- [4] None of these situations apply
- [-98] Other (please specify)

[page break]

8.23 News Interest

Q37 During the Coronavirus (COVID-19) crisis, have you been more or less interested in following:	Much less interested	Less	About the same	More	Much more	Prefer not to say	Unsure
	[1]	[2]	[3]	[4]	[5]	[-97]	[?]
Government and politics							
News in general							
Sport news							
Popular entertainment news							
Science news							
Health news							
Technology news							
Art and style news							

[Fix 'Government and politics' and 'News in general'. Randomize order of other items]

[page break]

8.24 C19 Thought & Concern

Q38 Have you ever had, or thought you might have, the Coronavirus (COVID-19)? [Radio box]

- [1] Yes
- [2] No
- [3] Unsure

Shown if Yes selected in Q38

Q38.1 Which of the following best describes your situation? [Checkbox (Grid)]

(Please select all that apply)

- [1] I might have had or currently have COVID-19, but I have not been tested
- [3] A doctor said I was a suspected COVID-19 patient, but I have not yet had a confirmed test
- [2] A doctor said I was a suspected COVID-19 patient, but I tested negative
- [5] A doctor confirmed I have COVID-19, but I have recovered and now test negative
- [4] A doctor confirmed I have COVID-19, and I am still infected
- [-97] Prefer not to say
- [-98] Other (please specify)

[page break]

8.25 C19 Views

Q40 How much do you agree or disagree with the following statements?	Strongly	Disagree	Neutral	Agree	Strongly Agree	Not applicable / No Opinion	Prefer not to say
	[1]	[2]	[3]	[4]	[5]	[-96]	[?]
Getting sick with the Coronavirus (COVID-19) can be serious.							
I will probably get sick with the Coronavirus (COVID-19).							
The Coronavirus (COVID-19) will not affect very many people in my community.							

[Randomize order]

[page break]

8.26 C19 GOVT Decisions

Q41 Which of the following is the government considering the most? [Checkbox (Grid), randomised]

(You may select up to three)

- [5] International influences
- [7] Public opinion
- [4] Advice from medical doctors
- [2] Economic considerations
- [6] Minimizing disruption to normal life
- [1] Scientific evidence
- [3] Political considerations
- [-97] Prefer not to say

Q42 Which of the following should the government be considering the most? [Checkbox (Grid), randomised]

(You may select up to three)

- [5] International influences
- [7] Public opinion
- [4] Advice from medical doctors
- [2] Economic considerations
- [6] Minimizing disruption to normal life
- [1] Scientific evidence
- [3] Political considerations
- [-97] Prefer not to say

[page break]

8.27 C19 Vaccine Views

Q43 How would you feel if the following was announced as a requirement in your local area?	Very	Mainly	Neither Favourably nor	Mainly	Very	Not	Prefer not to say
	[1]	[2]	[3]	[4]	[5]	[-96]	[?]
Coronavirus (COVID-19) vaccination when it is available.							

[page break]

8.28 News Sources & Trust

Q44 What information do you wish you knew about the Coronavirus (COVID-19)? [Textarea]

[-97] Prefer not to say

Q45 What primary news source do you use to stay informed about the Coronavirus (COVID-19) situation? [Dropdown]

(Start typing to limit results. Select the best match.)

[1] TheJournal.ie

[2] RTÉ News

[3] Irish Independent

[4] Breakingnews.ie

[5] Irish Times

[7] Sunday World

[8] British News

[9] Irish Examiner

[-97] Prefer not to say

[-95] Unsure

[-98] Other (please specify)

Shown if **British News** selected in **Q45**

Q45.1 Please specify your primary British news source: [Dropdown]

(Start typing to limit results. Select the best match.)

[5] BBC News

[16] Financial Times

[7] ITV News

[8] Sky News

[2] The Daily Telegraph

[1] The Guardian

[12] The Independent

[13] The New European

[10] The Observer

[4] The Sun

[15] The Sunday Telegraph

[9] The Times

[11] i / i Weekend

[-98] Other (please specify)

Q47 How do you usually access this primary news source? [Checkbox (Grid), randomised]*(Tick all that apply)*

[6] Mobile app

[1] Television

[4] Social media

[3] Radio

[2] News website

[5] Print newspaper

[-98] Other (please specify)

Q48 In the last 30 days, how often have you turned to your primary source for information about the Coronavirus (COVID-19) situation?	Never	Once	2-3 times	Once a week	2-3 times a week	4-6 times a week	Daily	Prefer not to say	
	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[-97]	[-95]
In the last 30 days, I have used my primary news source									

Q49 Please indicate to what extent you distrust or trust your primary news source for reliable information about the Coronavirus (COVID-19) situation:	Partially distrust		Neither distrust nor trust	Partially trust		Not applicable / No Opinion
	[-2]	[-1]	[0]	[1]	[2]	[-96]
My primary news source provides reliable information about the Coronavirus (COVID-19) situation.						

[page break]

8.29 Digital Divide

Q50 Do you have a home internet connection? [Dropdown]

- [1] Yes, Broadband connection
- [2] Yes, other connection
- [3] No
- [-97] Prefer not to say

*Shown if **Yes, other connection, Yes, Broadband connection** selected in Q50*

Q50.1 How would you rate the quality of your internet access at home? [Radio box]

- [1] Poor
- [2] Fair
- [3] Good
- [4] Very good
- [5] Excellent
- [-97] Prefer not to say

[page break]

8.30 Survey Completion

Thank you for completing this survey!

8.30.1 Future Contact

We may want to contact you again in the future for a second round to check back on your views and experiences. If you are willing to participate in this second part of the research, we will send you an invitation that specifies this purpose, and then you can decide later if you would still like to take part.

Q0FR Are you willing to receive another invitation in the future to learn more about how your views and experiences may have changed? [Radio box]

- [1] Yes, you can invite me to participate in the second part of this research
- [2] No, I do not wish to participate again

*Shown if **Yes, you can invite me to participate in the second part of this research** selected in Q0FR*
Only contact fields which have not been completed previously are shown.

8.30.2 Contact Information

Q0FN First name [text line]

Q0LN Last name [text line]

Q0EM Email address [text line, email]

Q0EM Phone number [text line, phone]

(Please write the full phone number, including country code. Note that we will only send up to 4 text messages and will never call you.)

*Shown if **Yes, you can invite me to participate in the second part of this research** selected in Q0FR*

Thank you for your participation in this survey and for being willing to participate in a follow up survey within the next year!

*Shown if **No, I do not wish to participate again** selected in Q0FR*

Thank you for your participation in this survey!

9 Appendix C:

Glossary⁹⁴

Attitude: In psychology, an attitude represents a person's positive or negative assessment of a thing, person, topic, or issue (the attitude object). Attitudes consist of two components: affect and cognition.

Affect: Affect is an attitude component and refers to feelings and emotions generated by stimulation through a thing, person, topic, or issue (the attitude object).

Cognition: Cognition is an attitude component and is related to knowledge, thoughts, beliefs, and attributes one associates with a thing, person, topic, or issue (the attitude object).

Average: The average, or mean, is the sum of all values divided by the total number of values. For instance, the mean of the numbers 6, 4, 2, 1, 3, and 6 is 3.7.

Chi-square test: This test is used when you want to evaluate whether two categorical variables are related.

Cognitive testing: The process of administering, and gaining detailed feedback on, all or part of a survey prior to the main survey with a smaller sample size in order to confirm that the intended meanings of your survey questions are clear to your respondents and that any directions you provide can be easily and accurately followed.

Correlation: The extent to which two variables have a relationship dependent on each other. For example, there is a correlation between eating high quantities of fatty foods and gaining weight.

Cramér's V: This test is used as a follow-up after a statistically significant chi-square result to determine the size of the effect.

Effect size: The effect size is a number representing the strength of the relationship between two variables. The larger this number is, the stronger the relationship.

Inferential statistics: Inferential statistics are numbers resulting from calculations which enable generalizations about a population from collected data with a known level of certainty that the results accurately reflect reality within a certain range. This is done, for example, by testing hypotheses and deriving estimates.

Likert-type scale: A Likert-type scale is typically a statement with a set of response options, allowing a respondent to indicate, for example, their level of agreement with a statement in a way that can be readily converted to numbers for analysis.

Margin of error: In statistics, the margin of error describes the amount of randomly occurring error that will happen during the process of generating data. Typically, the larger the sample size, the smaller the margin of error, and the more likely the results can be generalised accurately within a smaller range.

Median: When ranking the numbers in a set of data from the smallest to the largest number, the median represents the exact mid-point, or the most central number. For instance, the median of the set of numbers 1, 2, 3, 4, 5, 6 and 7 is 4.

94 Disclaimer: These are highly simplified definitions, not meeting scientific standards.

Mode: The mode is the most frequently occurring value or attribute in one set of data. For instance, among the set of numbers 6, 4, 2, 1, 3, and 6, the mode is 6.

Populous: Densely populated - here, it refers to the amount of people in a category or group.

Qualitative: Qualitative data represent observable phenomena which cannot be described by numbers and are subject to interpretation. Interview transcripts, for instance, are qualitative data which need to be systematically interpreted and organised in order to make valid assumptions about them. In this report, the blue text bubbles show qualitative data.

Quantitative: Quantitative data refers to set quantities, and therefore numbers. For example, the tables and figures in the results present quantitative findings.

Reliability: In statistics, reliability describes the overall consistency of a measure. When similar results are measured under constant conditions, the reliability assumption is achieved.

Sentiment: This refers to a feeling or opinion held or expressed.

Socio-demographics: This refers to characteristics of a population, such as gender, age, income, ethnicity, education, etc.

Spearman's Rho: In statistics, Spearman's Rho describes the correlation or relationship between two variables.

Statistical significance: When findings are statistically significant (e.g., at a confidence level of 5%), it means that they are probably not the result of pure chance (e.g., with a 95% probability).

Stratified random sampling: In statistics, stratified sampling is a sampling method in which the total population is divided into subpopulations, dependent on certain (socio-demographic) characteristics. Random samples are then selected from each subpopulation.

Validation: Validation describes the process of assessing something in terms of its validity and how they can be used in statistical analysis.

Validity: Validity is the extent to which a measurement instrument actually measures what it is supposed to measure. For example, a scale that is broken and does not display the correct weight provides invalid data. Valid research findings are those that closely correspond to the objective or subjective reality of the situation you are studying.

Variable: In statistics, a variable is a specific measure of an attribute (e.g., length or colour). Within a variable, different values from different measurements can vary - hence the name 'variable'. For instance, age can be a variable for which data was collected and which varies between respondents.

