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SUSTAIN-2: Impact study of the European Social Survey

Final report (Funding Source: EC H2020 871063)

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Executive summary

This report presents the findings of the second impact study of the European Social Survey (ESS) ERIC. It is a follow-up to the original impact study of the ESS, which was conducted in 2016/17.

This study was commissioned by the ESS ERIC and conducted by Technopolis, with bibliometric analysis from the centre for Science and Technology Studies (CWTS) at the University of Leiden. The study was funded under the European Commission Horizon2020 grant SUSTAIN-2 (reference 871063).

The purpose of this study is to identify the academic, non-academic and teaching impacts of the ESS. We note below our headline conclusions in brief.

User numbers and trends

- As of June 2021, there were 182,778 registered ESS users.[1] This means that since the start of the original impact study (June 2016) the number of registered ESS users has almost doubled
- The ESS user base has grown consistently by around 14-15% each of the last five years and its composition has largely stabilised to around two thirds students, one quarter academics (faculty/research or PhD), and just under 10% other (typically non-academic) user types
- Indicators of ESS use-intensity are promising. In the year up to June 2021, 74% registered users had downloaded ESS data. The proportion of downloaders has grown steadily, increasing by 5% since the original impact study in 2016
- Whilst there is substantial 'churn' in the overall user numbers, there is also evidence of much repeat-use. Of the roughly 50,000 non-student ESS users registered by 2020, 7,712 had logged in and downloaded data with the calendar year. We estimate that around 3,500 of these were repeat-users, who registered in a previous year and have since returned
- Current ESS member/observer countries generally have among the highest numbers of ESS users, although some current guest countries or former participating countries also feature in the 'top-30', as well as three fully non-European countries: the USA, Canada and China
- There is substantial variation on how fast the user bases have grown in different countries during this period. Interestingly, the highest rates of growth have occurred in countries fully outside of Europe (China and Chile). Other high-growth countries include former participants or current guest countries (Russia, Spain, Denmark). In short, while this study largely focuses on core ESS members, there are signs of growing ESS use much further afield

Teaching impacts and institutional hotspots

The ESS is being used increasingly widely as a teaching tool, featuring across participating countries and in an increasing number of institutions for both methodological and thematic courses.

While overall ESS user numbers are strongly driven by users registering as students, the 'true' number of students using the ESS is likely higher than the ESS user data suggests, as many lecturers may download ESS data and convert the data into materials for their students, who themselves never actually register with the ESS. Nevertheless, ESS user data provide a useful proxy to identify teaching hotspots:

[1] Registration is permanent so this figure is cumulative.

- In 2016, there were 18 institutions with more than 500 confirmed[2] users (including four with over 1,000). By the start of 2021, this increased to 42 (including 15 institutions with over 1,000 confirmed users). Many cluster around the Benelux countries, England and western Germany. However, there are at least some such user hotspots in most European regions
- The user base at several of the current top-30 has grown by between 60% and 100% compared with 2016 – roughly in line with the overall growth of the ESS user-base. However, there are also several institutions where the number of ESS users has increased at a rate far and above what would be expected. There is therefore a clear sense that new hotspots of high ESS-use rapidly emerge (indicating widespread use for teaching at those institutions), whilst established hotspots continue to grow at steady rates

Academic impacts

The ESS continues to be viewed positively for its exceptionally high methodological standards. Even in direct contrast to other national and international social values and attitudes surveys, the ESS continues to be viewed as a gold standard.

Various measures we have taken suggest that the overall volume of ESS-based publication output has increased by at least 150% since the first ESS impact study of 2016/17. Including various different publication types and non-English language publications, data collected by staff at the University of Ljubljana suggest that there are over 7,500 ESS-based publications in existence (equivalent figure in the first impact study was 2,704). CWTS was able to identify 2,448 ESS-based items listed on Web of Science, which compares to around 1,000 in a similar analysis conducted in 2016.

Drawing on the 2,448 ESS-based items listed on Web of Science, bibliometric analysis performed by CWTS yields the following findings:

- The citation impact of ESS publications is well above average, being about 70% more highly cited than average, with 21% of all ESS publications belonging to the top 10%. The journals in which work is being published have a citation impact of 40% above the world average. The citation impact seems to be highest around 2008, gradually decreasing in more recent times, but still staying well above average
- Whilst output volume and citation metrics are generally highest in western European countries with especially strong research systems and, within those, in the most prestigious universities, ESS-based work performs well (i.e. above average) on citation metrics when we variously adjust for field, year, institution or journal
- The ESS is mostly used by ESS member countries, producing almost three quarters of all ESS publications. The United Kingdom, Germany and the Netherlands are the largest producers of ESS publications with respectively 436, 337 and 292 publications. All three countries show a fairly high impact, roughly twice as high as average. The largest producer of ESS publications outside of the ESS member countries is the USA, with 315 publications, and has a very high impact, of almost three times the average
- The three largest producers are the Katholieke Universiteit Leuven, University of Oxford and the University of Amsterdam with respectively 119, 75 and 69 publications. The impact at Oxford is especially high, being over three times higher than average. These three institutions show a high impact also in general in the social science and humanities (SSH),

[2] Users enter their institution manually and our analysis may not have captured un-common mis-spellings or abbreviations. Further, there is evidence that some student-users may be given ESS-based materials by their teachers rather than registering themselves.

but the impact of ESS publications is higher still. Indeed, for all institutions the impact of their ESS publications is about 1-3 times higher than the impact of their SSH publications

- Most ESS-based publications are being published in the WoS subject categories of Sociology and Political Science representing about 40% of all ESS publications. Economics is the third largest subject category, representing only about 6% of all publications. The impact is higher in Political Science than in Sociology. The USA is most active in Political Science while Germany and the Netherlands are most active in Sociology
- Using a more granular field classification consisting of 4,140 so-called micro-fields, we find that ESS publications are dispersed across quite a number of different micro-fields. The four largest micro-fields concern voter turnout, social capital, the welfare states and social values, together representing about one third of all publications. The number of publications in smaller micro-fields tapers off gradually. Additional topics that emerge from text-mining titles and abstracts from ESS publications relate to data gathering and measurements, (im)migration, labour, education, family composition and health, including also gender aspects

Non-academic impacts

Our research could not identify a meaningful way of quantifying the non-academic impacts of a research infrastructure such as the ESS. However, our country-level research yielded many examples of non-academic impacts of many different types and across different domains. These take many different shapes, including

- General intelligence and insight for NGOs or government ministries, agencies or advisory bodies
- Agenda setting by using ESS data to highlight a particular problem or challenge, triggering various types of policy action
- Influence on public debate or highlighting certain issues to the general public through presentation of ESS data or ESS-based findings in the news media
- Monitoring, i.e. using ESS data as indicators to track certain aspects of societal progress, e.g. to help assess whether certain policies are achieving the desired outcomes

To better understand outreach and the ESS's presence on social media, we conducted a social media analysis, which yielded the following main findings:

- The performance of the ESS' own social media accounts is overall good compared to similar organisations. The average engagement rate of the official ESS Twitter account over the analysed period was 1.02%, which means that 10.2 ESS Twitter followers out of 1,000 engaged with an ESS tweet on average (a Twitter engagement rate between 0.33% and 1% is generally considered to be high)
- Academia and researchers are the most active communities online when it comes to the ESS. This is in line with the objectives of the ESS and with its intended target groups. Overall, the ESS' main online audience tends to be in the UK. This is also somewhat reflected in the UK's comparatively high share of non-academic ESS users
- The social media analysis revealed that there are areas which resonate very significantly with online audiences. The ESS data on the public's attitude towards the EU membership is one of them

1 Introduction

1.1 This study

This report presents the findings of the second impact study of the European Social Survey (ESS) ERIC. This study was commissioned by the ESS ERIC and conducted by Technopolis, with bibliometric analysis from the centre for Science and Technology Studies (CWTS) at the University of Leiden. The study was funded under the European Commission Horison2020 grant SUSTAIN-2 (reference 871063). The purpose of this study is to identify the academic, non-academic and teaching impacts of the ESS.

- **Academic impact** – Highly cited or otherwise influential work in the social sciences, improvements to the methodology of other surveys in Europe, improvements of the standards and rigour, introduction of new approaches. It may also include contributions to the European and national research ecosystems, including provision of data for social scientists and enabling the tracking and charting of stability and change in Europeans' social attitudes, conditions and behaviours
- **Non-academic impact** – use of the ESS data by policymakers, practitioners, NGOs, think tanks and others at the national and international levels, including the general public, boosting the understanding of public attitudes critical to formulating public policy, influencing political, policy or public debates
- **Teaching impact** – the impact of the ESS on teaching at various levels (from Bachelor's, through master's to doctoral level), including its advantages as a teaching tool and improvement of courses and student outcomes, and its added value in different national contexts where other social surveys suitable for teaching use may already exist but not offer some of the teaching-related features that the ESS does

The impacts for any programme or activity are best discussed in relation to its stated and defined aims and objectives. In addition to charting stability and change in social structure, conditions and attitudes in Europe, the main aims of the ESS are stated to be:[3]

- To achieve and spread higher standards of rigour in cross-national research in the social sciences, including for example, questionnaire design and pre-testing, sampling, data collection, reduction of bias and the reliability of questions
- To introduce sound indicators of national progress, based on citizens' perceptions and judgements of key aspects of their societies
- To undertake and facilitate the training of European social researchers in comparative quantitative measurement and analysis
- To improve the visibility and outreach of data on social change among academics, policy makers and the wider public

The first main section of this report will provide an up-to-date analysis on ESS user data to show the scale and distribution of ESS-use. The following three sections of this report are structured around the three impact domains noted above – academic, teaching, and non-academic impact respectively. Finally, we provide findings from our social media analysis (see below), which presents a particular aspect of non-academic impact, before also discussing drivers and barriers to impact in the final main section.

[3] http://www.europeansocialsurvey.org/about/

See also: http://www.europeansocialsurvey.org/docs/about/ESS-ERIC-Statutes-version-16-November-2021.pdf

1.2 The previous ESS impact study

This study is a follow-up to the original impact study of the ESS, which was conducted in 2016/17, also by Technopolis with bibliometric analysis by CWTS, under the Horizon2020 grant ESS-SUSTAIN. The outputs from that study are available on the ESS web site.[4] The headline conclusions of that study were as follows:

- As of mid-2017, the ESS had a large and growing user base. It stood out as a valuable resource especially due to its high quality standards, simple and open access, and the increased capacity for international comparison, from which many academic and non-academic users were benefiting immensely
- The high quality standards, country coverage and increasing longevity of the ESS had contributed to impressive levels of academic impact: ESS-based work was often highly-cited and had made important contributions to several fields, whilst often also strengthening both topical and methodological expertise and reputation at many institutions. For academic purposes, the ESS was rated as a gold standard for surveys of this type
- The ESS was also providing an important teaching resource in many contexts: it was viewed as a useful tool for entry-level teaching, especially for methodological aspects of social science degrees and particularly in smaller countries that did not have many suitable alternative data sources to act as real-world teaching tools. Likewise, it was being used widely at higher levels, both for guided learning and independent dissertation work (at master's and PhD levels)
- The ESS had also been used to many different effects in non-academic domains. ESS data were identified as a powerful tool to demonstrate particular problems in a given country, and also as a useful resource for indicator construction and policy monitoring, though many other non-academic uses and impacts of the ESS were likewise showcased

The 2016/17 impact study also drew many conclusions on impact pathways and barriers. Notably, it posited the notion of 'impact systems': different countries have different levels of resources, different research systems, different traditions and topical emphases in the social sciences, and indeed different cultures in terms of, for example, evidence and data informed policymaking and data journalism. The importance of studying ESS impacts in individual countries was made especially clear from this perspective.

The present study draws on the findings -including the broader conceptual observations – of the original impacts study, checking to what extent the types of impact pathways, drivers, barriers and national 'impact systems' still apply, and, most importantly, providing a comprehensive update on how much the impact of the ESS has increased in the intervening years. As we note in the next section, the total ESS user base has roughly doubled since the beginning of the last impact study in mid-2016, which in itself suggests that there are many new impacts to report.

1.3 Country reports

Aside from researching the impact of the ESS overall, we have also studied 20 ESS member countries in-depth. These include 17 countries covered in the same way in the original impact study (Austria, Belgium, Czechia, Estonia, France, Germany, Hungary, Ireland, Lithuania, Netherlands, Norway, Poland, Portugal, Slovenia, Sweden, Switzerland, and the United

[4] https://www.europeansocialsurvey.org/findings/impact

Kingdom), as well as three additional ESS member countries that had not been studied in-depth before: Bulgaria, Finland and Latvia. A further eight ESS-participating countries were studied in-depth in a small follow-up to the original impact study in 2018. These are Cyprus, Denmark, Greece, Israel, Italy, Russia, Slovakia and Spain. This study does not provide in-depth findings on these countries, as they have been covered relatively recently.

Alongside this main report covering the overall impacts of the ESS (with specific examples where helpful), we therefore also submit alongside it 20 short reports (around 8-15 pages) on each of the 20 countries named above.

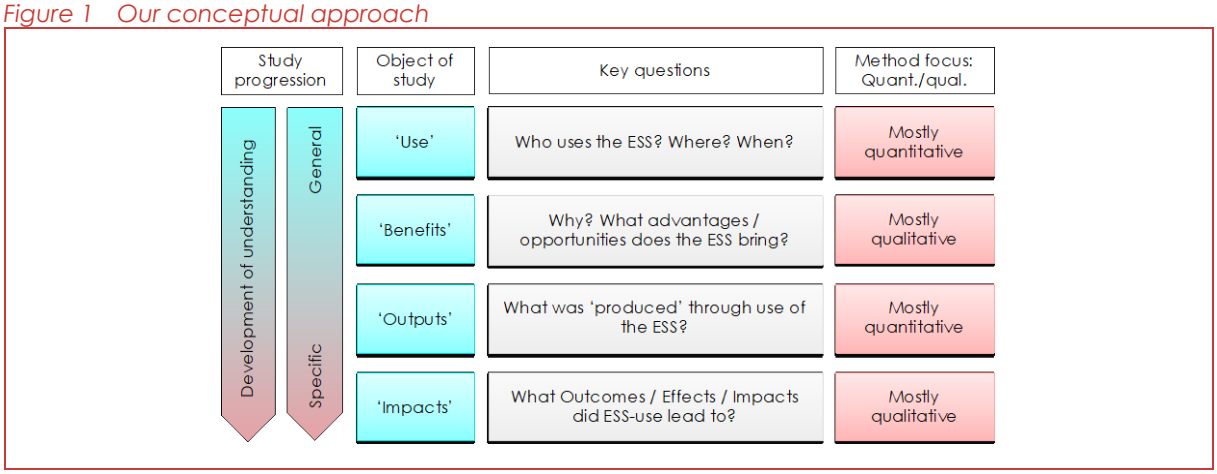
1.4 Method

Full method details are appended to this report. In brief, this study consists of four core components:

- User data update: we draw on ESS user data provided by NSD to provide an update of our analysis from the original impact study, in order to give an up-to-date picture of use, use-intensity and use-distribution
- Country-level research: for each of the 20 countries covered, we extracted country-specific ESS user data, conducted desk research and several interviews. In total, we spoke to 77 individuals across the 20 countries studied, 14 of which via e-mail exchange only, the others through in-person interviews (usually via videoconference). They include individuals connected to the national coordination of ESS, as well as academic and non-academic ESS-users
- Social media analysis: we conducted an analysis of social media and media activity and 'echo' of the ESS. This includes the ESS' 'owned' content (i.e. material posted by the ESS through its channels) and 'earned' content (i.e. material posted by others). The main purpose of this task was to contribute to the understanding what kind of ESS content tends to resonate well on social media and who the ESS's audiences are
- Bibliometric analysis: the Centre for Science and Technology Studies (CWTS) at the University of Leiden undertook a bibliometric analysis of ESS-based publications, replicating as closely as possible the analysis undertaken in the original impact study

As in the original impact study, we use a mixed methods approach, systematically combining quantitative and qualitative information to arrive at findings that have quantifiable and (where suitable) comparable dimensions, whilst also having the depth required to explain the benefits and describe specific impacts and impact pathways of the ESS.

Figure 1 Our conceptual approach



2 User data update – ESS use and growth trends

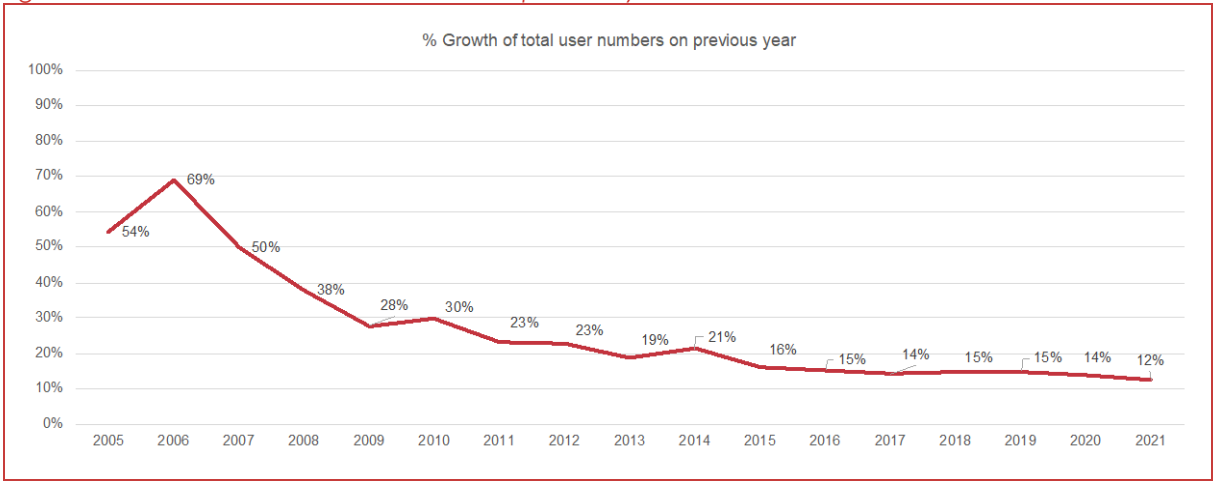
2.1 Overall user numbers and growth trends

As of June 2021, there were 182,778 registered ESS users. These headline figures underscore the rationale for an update to the original impact study: since the start of our original impact study the number of registered ESS users has almost doubled (from 94,617 in June 2016). This substantially increased user-base brings with it a high likelihood of new and increased impact.

Figure 2 Total registered ESS users 2004 – 2021

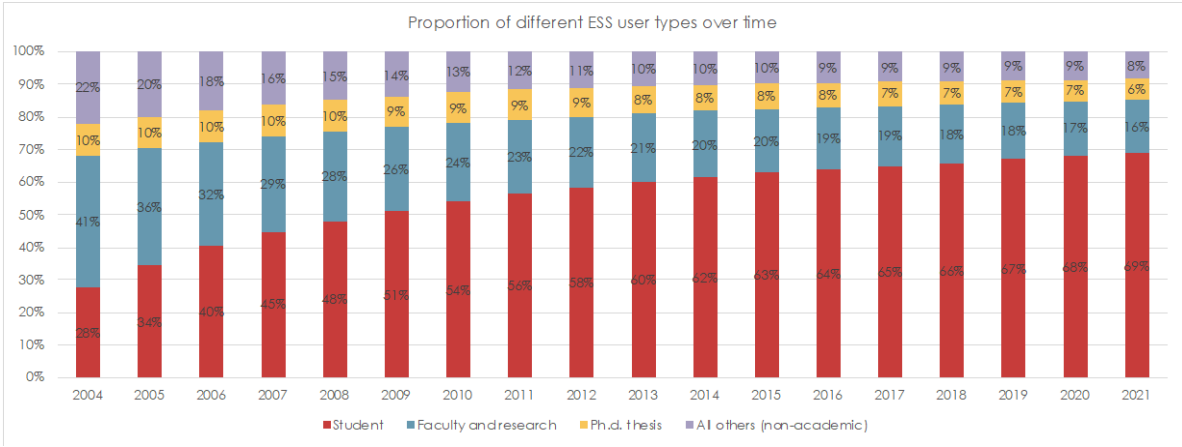
In our original impact study, some participants expressed concern that the ESS may be approaching a saturation point, where most people who might be interested in the ESS are now in fact using it, meaning that growth of the user base would slow or stall. Five years on, these concerns still do not appear to be vindicated. The ESS user base has grown consistently by around 14-15% each of the past five years. The June 2021 figure shows a slight decrease in growth, which is likely due to the COVID-19 pandemic. In our country-level research, we find that this decrease is driven by some 'dips' in specific countries with large user bases (e.g. Netherlands, Germany, UK), where university campus closures and deferred university entries may have had a significant effect.

Figure 3 % Growth of total user numbers on previous year



The rate of increase is higher for students than for other user types (see Appendix B.1.2). However, there is growth across all user types and the composition of the ESS user body has largely stabilised to around two thirds students, one quarter academics (faculty/research or PhD), and just under 10% other (typically non-academic) user types.

Figure 4 Proportion of different ESS user types over time

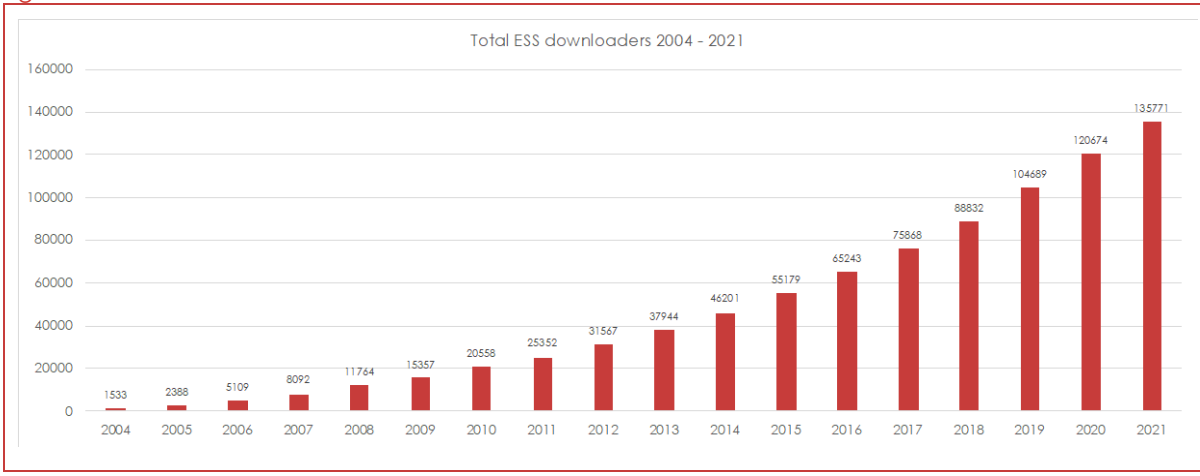


2.2 Use intensity – downloaders and active users

The overall numbers of registered users of course say little about what may be termed use intensity: some may register but never actually make use of the ESS or may only make a few quick observations with the online data tool and never return.

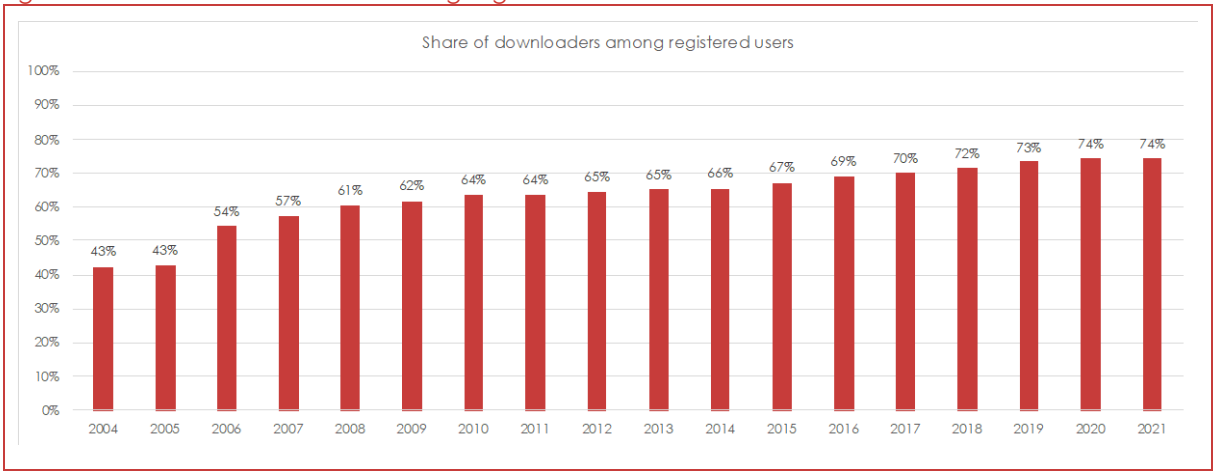
However, we find that indicators of more intensive ESS use are also promising. By June 2021, 135,771 ESS users had also downloaded some data, which equates to 74% of the total user base.

Figure 5 Total ESS downloaders 2004 – 2020



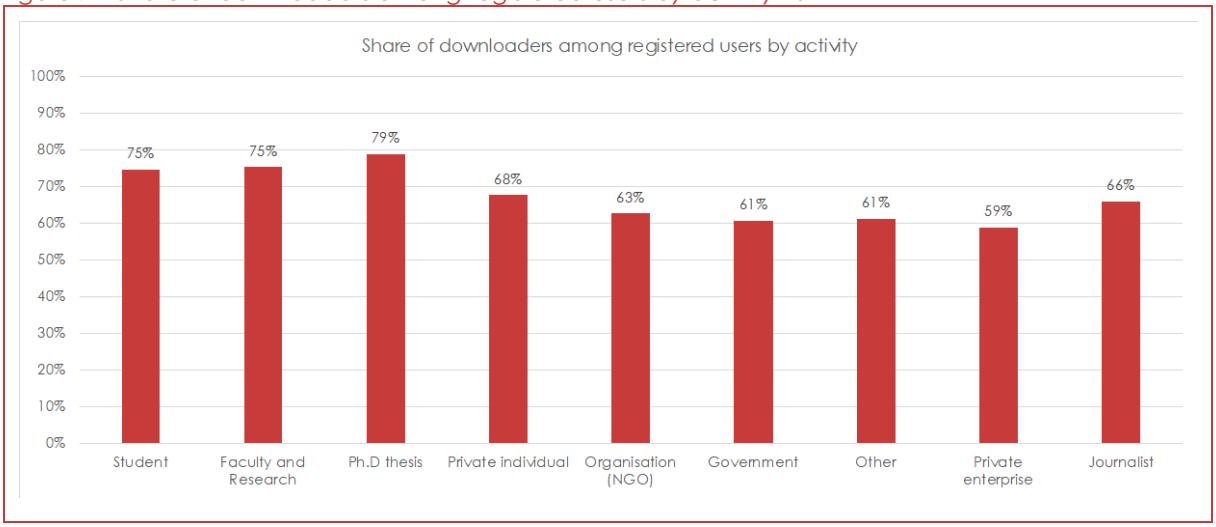
This proportion of downloaders is part of a slow but steady upward trend: the overall proportion of users who actually download ESS data has increased by 5% since our original impact study in 2016.

Figure 6 Share of downloaders among registered users over time



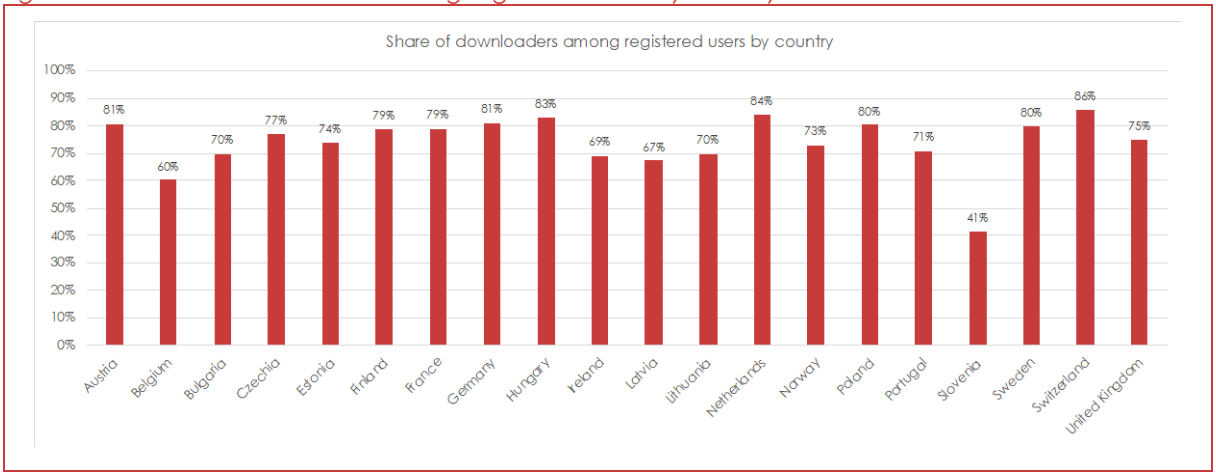
At the more detailed level, we find that the proportion of downloaders is slightly higher among students and academic users (including PhD students). However, even among the various non-academic user categories a minimum of around 60% of users have downloaded ESS data.

Figure 7 Share of downloaders among registered users by activity 2021



At the level of individual countries, there are slightly more substantial discrepancies. We cannot pin-point in every case why ESS users in some countries have a much higher propensity to download data than in others. However, we note that Belgium and Slovenia both have especially high numbers of student users, and our country-level research indicates that there may have been more instances here of mandatory (or at least strongly encouraged) ESS registration on certain university courses, with many students then not necessarily going on to use the data.

Figure 8 Share of downloaders among registered users by country

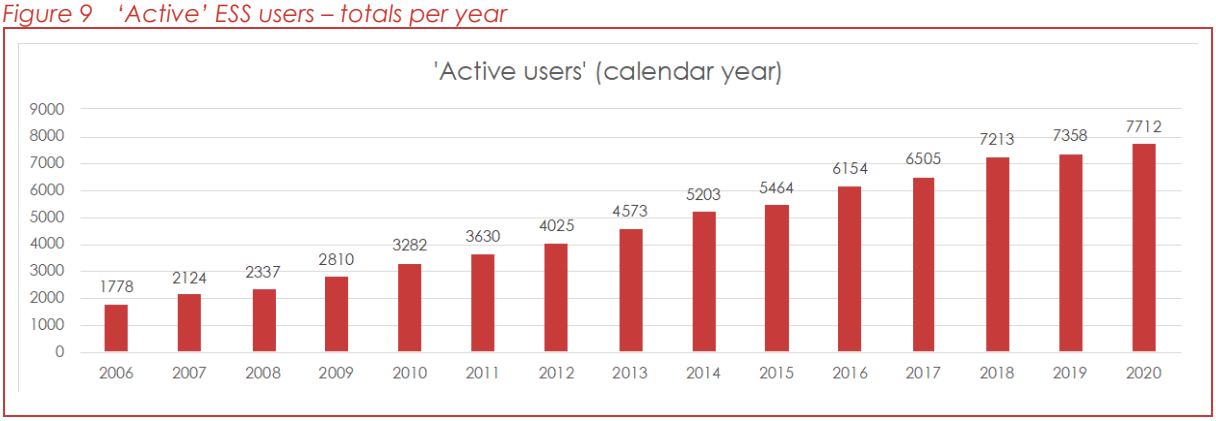


NB: For easier visualisation, the chart includes only the 20 countries researched in-depth for this study. Almost all other countries also fall into the range illustrated here.

As part of the issue of use intensity, we also addressed the possibility of user 'churn'. The cumulative numbers of users of course say little about how many people are making use of the ESS at present: many users may register, possibly download data once, and never return. Some of these may of course have downloaded a dataset many years ago and might still be working with it intensely. We stress that such users are not deemed in any way insignificant or irrelevant by this study and they are firmly within the scope of our subsequent country-level and qualitative analyses. However, getting a clearer sense of who is using the ESS in its current form and at the present time is a key point to cover when developing an understanding of the scale of ESS-use.

In our original study, we designated the category of 'active' ESS users: non-student users who have logged in and downloaded data at least once within the last 12 months. We exclude students from this category for two reasons. First, students may be asked to register with the ESS for specific courses or modules, and so we can expect many students to only use the ESS for one particular term, semester or academic year. Secondly, our original impact study highlighted that registered user numbers are in fact a poor measure of how many students use the ESS, because many students may be given ESS-based exercises by their teachers without ever registering themselves. In our analysis of 'active' users, we therefore exclude students. With this definition, there were 7,712 active ESS users in the 2020 calendar year.

Figure 9 'Active' ESS users – totals per year



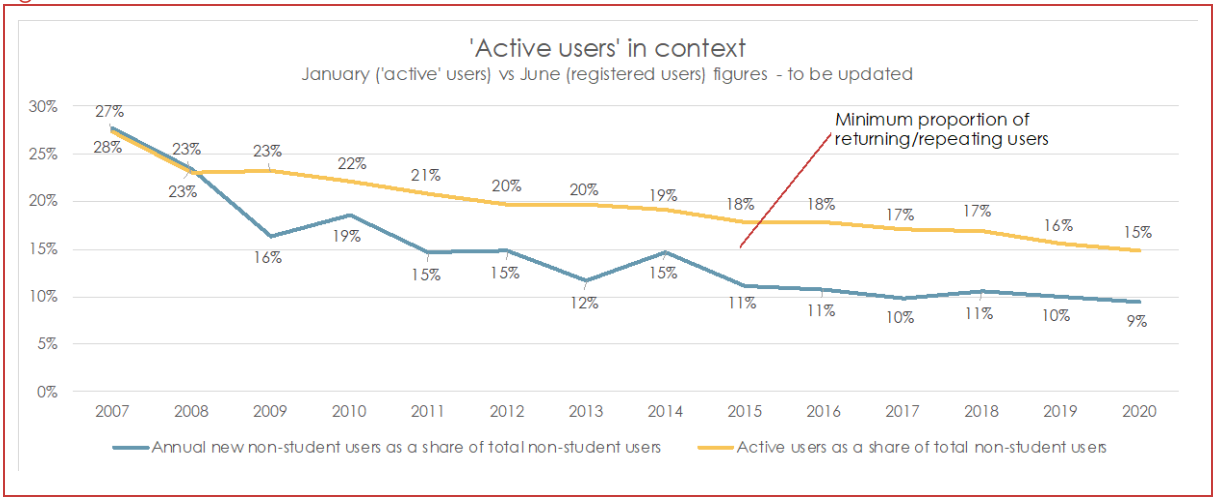
Definition of active users: Number of non-student users who have logged in and downloaded data one time or more during the calendar year

This total of 'active' users will of course include a substantial number of users who have newly registered in the same year. However, we can be certain that the 2020 active users include many who had registered with the ESS before 2020, as annual active user numbers are substantially higher than annual numbers of newly registered non-student users (e.g. 4,917 for the June 2019-2020 period compared with 7,712 active users in the 2020 calendar year).

The graph below contrasts over time the annual share of new non-student users (blue) with active users (yellow), both as a share of the total non-student user base. In recent years, the share of active users has consistently been around six percentage points higher than the share of new users.

In other words: an absolute minimum of six per cent of non-student ESS users registered more than a year ago, but have since returned to download data. This share is most likely a little higher, as not all new users actually download data (and therefore do not get counted as 'active' users). For 2020, we therefore estimate that of the 7,712 'active' users, around 3,500 were repeat-users, who registered in the past and have since returned. As with the various other trends presented in this section, these numbers too are likely to increase in the future.

Figure 10 Active users vs new users

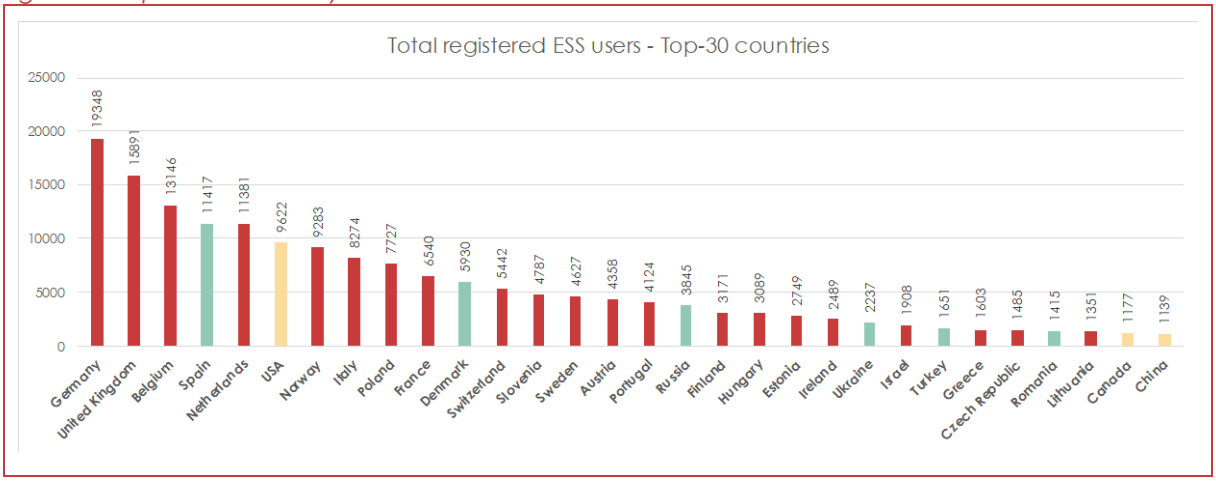


2.3 Users by country

There are registered ESS users in over 240 countries and territories. However, the great majority are based in European countries, with the USA, Canada and China the only fully non-European countries with more than a thousand users as of June 2021.

The chart below shows the top-30 countries by total ESS registered user-count. These 30 countries combined account for 94% of the total ESS user base; the top-10 alone account for 61.5%. Current member/observer countries dominate the list, although some current guest countries or former participating countries also feature, as well as three fully non-European countries: the USA, Canada and China.

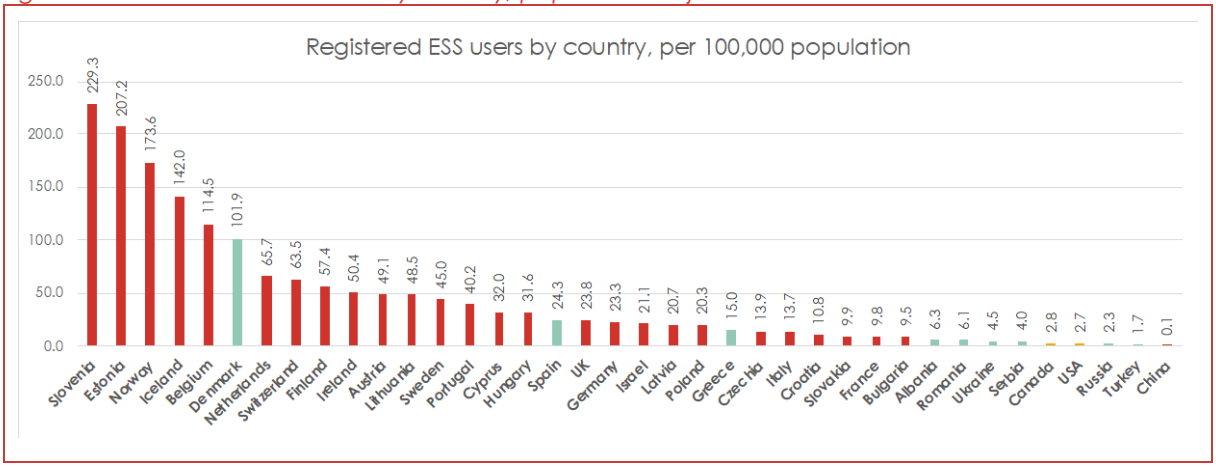
Figure 11 Top-30 countries by ESS user-count



Based on June 2021 data. Red = Current member/observer country; Green = current guest or former member or guest country; Yellow: Never participated / fully outside Europe

These figures of course favour the most populous countries. Below we show countries sorted by highest user numbers adjusted for population.

Figure 12 Total ESS user numbers by country, population-adjusted



Based on June 2021 data. Red = Current member/observer country; Green = current guest or former member or guest country; Yellow: Never participated / fully outside Europe. Demographic data: Population, total, World Bank indicators, 2019

When adjusted for population, smaller countries and those located in the north of Europe tend to dominate, but this is far from absolute. This tendency may be attributable to the fact that these countries have larger research systems and larger shares of people in university education. Moreover, in smaller countries, it may be easier for NC teams to reach out and promote the ESS system-wide, which becomes more challenging in countries with a large number and/or diversity of HE institutions.

In large part, these absolute user numbers are historical. The figures above strongly resemble those from our original impact study in 2016/17 and say little about recent growth. We provide figures on year-by-year user growth for the 20 countries covered in depth in in Appendix B.1.1. However, we also expanded beyond this and identified the countries with the highest user growth between the original impact study and 2020, irrespective of member, observer, guest

or non-participating status, though we limited the analysis to the 50 largest countries by ESS user count.

There is substantial variation on how fast the user bases have grown in different countries during this period. Interestingly, the highest rates of growth have occurred in countries fully outside of Europe (China and Chile). Other high-growth countries include former participants or current guest countries (Russia, Spain, Denmark). In short, while the remainder of this study will largely focus on core ESS members, there are signs of growing ESS use much further afield.

Table 1 Countries with the strongest ESS user growth rate 2016-2021

Country	User count June 2016	User count June 2021	Growth
China	346	1139	229%
Chile	87	235	170%
Lithuania	548	1351	147%
Russia	1578	3845	144%
Spain	4815	11417	137%
Italy	3547	8274	133%
Denmark	2648	5930	124%
Mexico	123	274	123%
South Korea	236	504	114%
United Kingdom	7552	15891	110%
India	162	339	109%
Sweden	2230	4627	107%
Canada	574	1177	105%
France	3251	6540	101%
Cyprus	192	384	100%
Germany	9680	19348	100%
Ukraine	1120	2237	100%
Estonia	1391	2749	98%
Norway	4729	9283	96%
Turkey	847	1651	95%

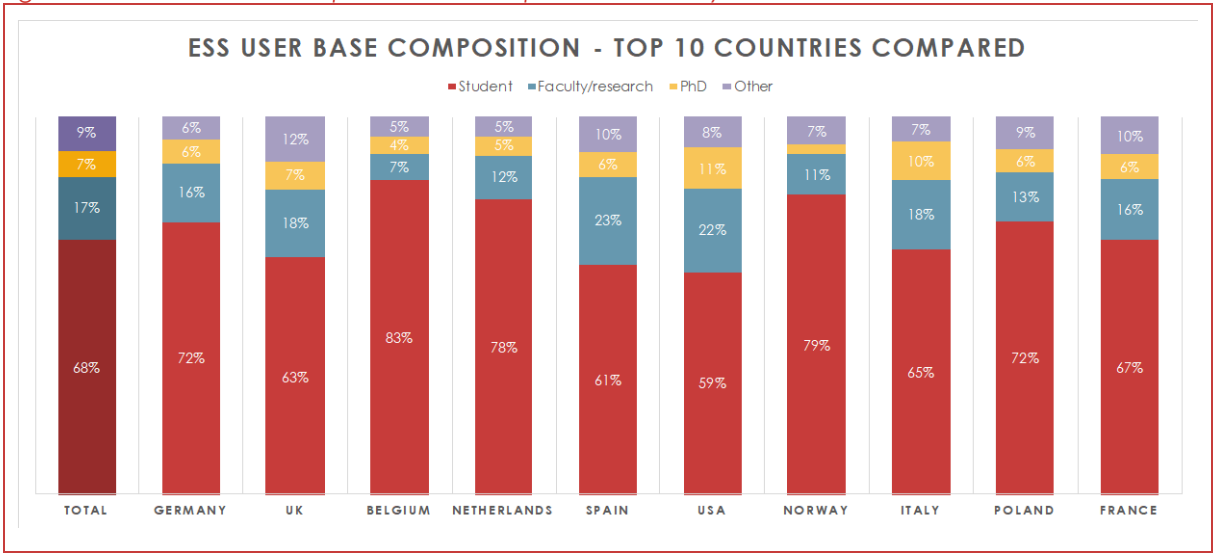
NB: analysis includes only the top-50 countries by overall June 2021 user count, the lowest being Indonesia with 190 users. All countries that have participated in the ESS are included in this top-50 list.

2.4 User types by country

The original ESS impact study posited the notion of 'impact systems' to show, among other things, that in different countries, the ESS is valuable for different things and used in different ways. We can see some signs of this when we look at the composition of the user base in different countries. Below we consider just the top ten countries by user count, in part to allow for more reader-friendly data presentation, but also because these ten countries largely drive the overall composition of the ESS user base.

Norway, Belgium and the Netherlands have unusually high shares of student-users, while users from non-academic domains are especially prevalent in the UK, Spain and France; the USA and Italy have especially large shares of PhD users.

Figure 13 ESS user-base composition in the top-10 countries by user-count



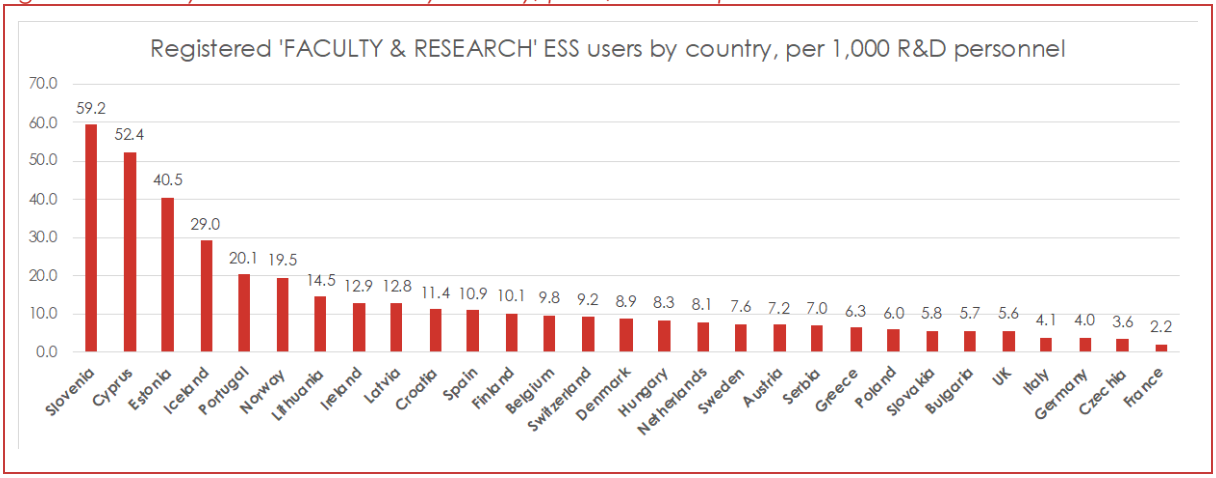
Based on June 2020 data – FIINAL 2021 CALCULATIONS PENDING FOR FINAL REPORT.

Below we present data on individual ESS user types, adjusted for relevant populations using Eurostat figures on R&D personnel, PhD students, social science HE students, and government employees as our demographic data. Eurostat does not cover all countries mentioned in the sections above, so a small number of current or former participating countries are not included below, and neither are the non-European countries listed above.

Once again, our findings broadly reflect those from a similar analysis conducted for the original ESS impact study, and they also broadly reflect the overall figures on total user numbers adjusted for national population. However, there is also some variation, with different countries being especially prominent for certain user groups. The significance behind these figures will be at least partially established in our subsequent work, but some immediate observations include:

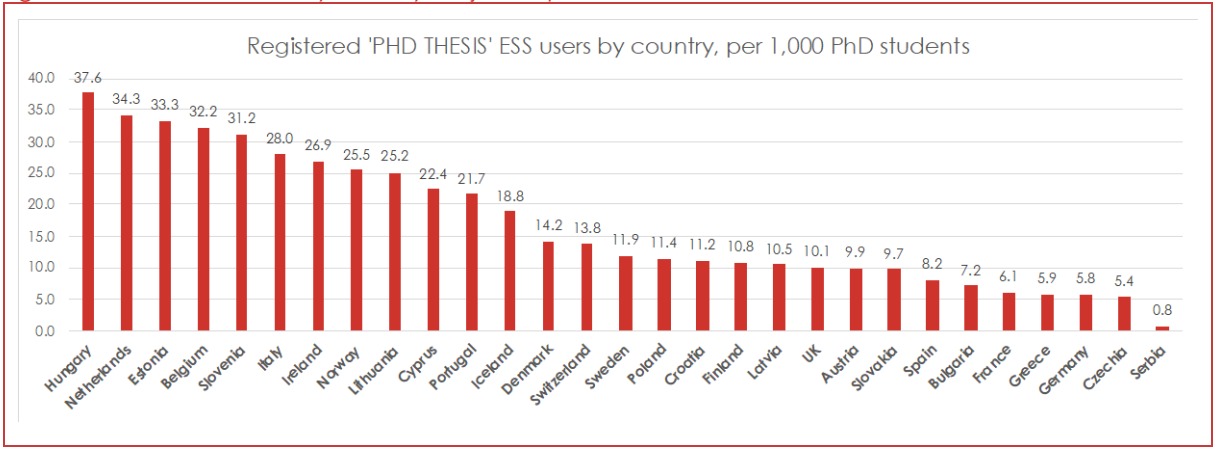
- Cyprus has an especially high rate of ESS use among academics, above and beyond what might have been expected from overall user figures
- Hungary has an especially high rate of PhD users
- Estonia, Iceland and Finland have the highest rates of ESS use in the government sector

Figure 14 Faculty & Research users by country, per 1,000 R&D personnel



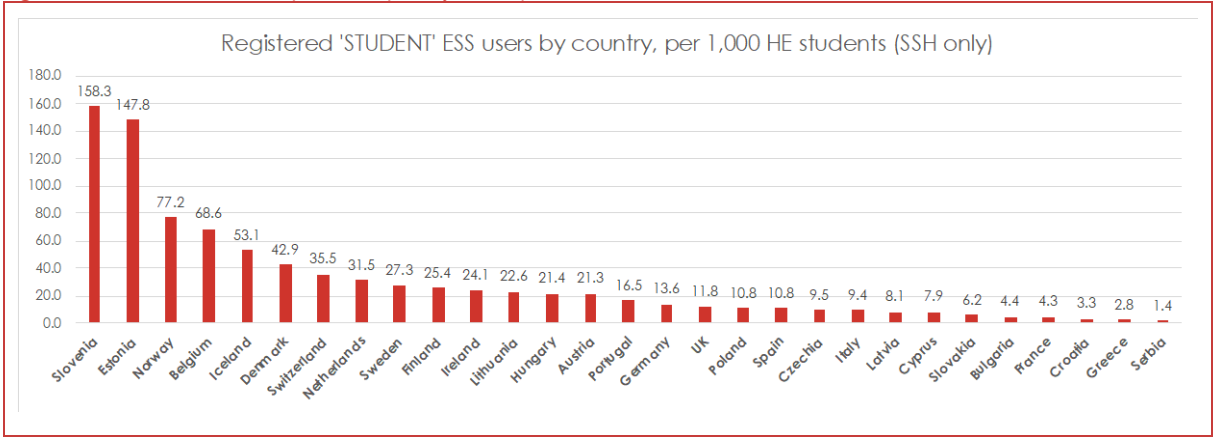
Based on June 2021 data. Demographic data: R&D personnel by sector of performance, professional position and sex [rd_p_persocc]: Full-time equivalent (FTE), Eurostat 2019

Figure 15 PhD-thesis users by country, adjusted per 1,000 PhD students



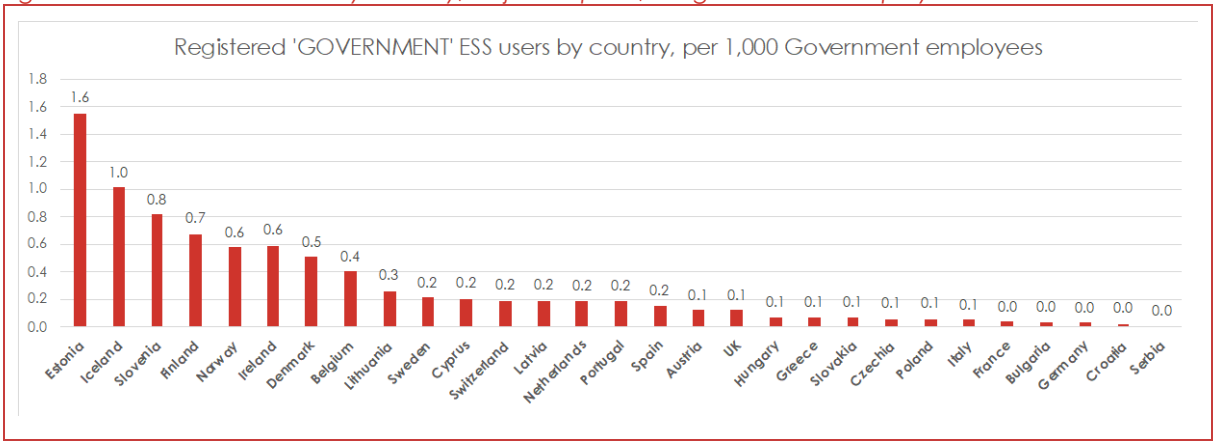
Based on June 2021 data. Demographic data: Students enrolled in tertiary education by education level, programme orientation, sex and age [educ_uoe_enrt02]: Doctoral or equivalent level, Eurostat 2018

Figure 16 Student users by country, adjusted per 1,000 SSH HE students



Based on June 2021 data. Demographic data: Students enrolled in tertiary education by education level, programme orientation, sex and field of education [educ_uoe_enrt03]: All tertiary but Doctoral or equivalent level, enrolled in Humanities, Social sciences, Business administration and Law, Eurostat 2018

Figure 17 Government users by country, adjusted per 1,000 government employees



Based on June 2021 data. Demographic data: Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) [lfsq_egan2]: NACE O - Public administration and defence; compulsory social security, LFS/Eurostat, 2020Q3

3 Academic impact

In terms of the general benefit and added value of the ESS, our research highlighted almost exactly the same picture that was already presented in the original 2016/17 impact study. Specifically, interviewees across countries consistently noted:

- The ESS is viewed positively for its exceptionally high methodological standards. Even in direct contrast to other national and international social surveys, the ESS continues to be viewed as a gold standard. Some interviewees noted specifically that other international social surveys are less prescriptive to national teams, while the central ESS team sets especially rigorous standards for national data collection and processing. This, in the view of interviewees, may make the ESS more challenging to execute, but it is also identified as a key driver behind its high quality and, consequently, its value in the eyes of academics
- The breadth of topics means that it is appealing to a wide range of researchers. Sociology and political science continue to be the disciplines to which the ESS is most relevant, but several elements of it are also being used in disciplines including international relations, economics, psychology, anthropology and theology/religious studies
- The existence of core modules means that there is a known and reliable source of data on key topics of interest to many researchers that will be updated regularly, while the existence of rotating modules means that newly surfacing issues can be included. This dual nature is highly appreciated
  - There are many instances where rotating modules have led to substantial research activity, notably the recent module on attitudes to climate change. The upcoming module on COVID-19 is also greatly anticipated
  - The 2016/17 impact study highlighted that the longevity of the ESS means that it is becoming increasingly useful for analysis of certain phenomena over time, including e.g. before and after certain key events – the 2008 financial crisis was mentioned often in the previous study. For the present study, this advantage was noted substantially more frequently, likely owing to the fact that the ESS has now been in existence for a further five years

For a more detailed account of academic benefits and added value, we refer to the original impact study from 2016/17.[5] Many of the points made in it were repeated by consultees for the present study.

Before we cover outputs and impacts as measured by publications, it is worth highlighting that the ESS also has an influence on other surveys. This is only partially an 'academic' impact, as many of those other surveys may not be of a strictly academic nature (e.g. opinion polls or surveys conducted by government ministries or agencies). The 2016/17 impact study found several examples of other surveys adopting either specific ESS questions or elements of the ESS methodology to strengthen their own – and indeed to facilitate direct comparison with ESS findings. Likewise, our research for the present study identified several more of such examples. To name just one: the Irish Healthy and Positive Aging Initiative (HaPAI) has used the ESS as the basis for some of its own survey questions to improve policy and services for Irish citizens as they age. The HaPAI will then be used to form an indicator set that can be deployed by the Irish government to establish policy goals in the long-term.

[5] Report available: https://www.europeansocialsurvey.org/docs/findings/ESS-Impact-study-Final-report.pdf See in particular sections 4 (pp. 33-37) and 6.2.2./6.2.3 (pp. 54-57)

3.1 Outputs

The first ESS impact study of 2016/17 benefited from what was then known as the 'ESS Bibliography', an online tool that formed part of the main ESS web site where ESS users were asked to log any outputs they produced using ESS data. In analysis conducted in March 2017, a total of 2,704 outputs had been logged across a range of different publication types (articles, books, theses, conference papers, etc).

At the time, it was already unclear, first, whether there may have been duplicate publications reported (e.g. where multiple authors of the same publication may mistakenly have reported the same publication) and, second, whether the ESS bibliography had complete coverage. In recent years, it became increasingly clear that the system of manual self-reporting no longer guaranteed comprehensive coverage. The ESS Bibliography is new defunct.

However, researchers at the University of Ljubljana took over the existing data from the defunct ESS bibliography and continue to monitor ESS-based publications. Their data were shared with us for this study, and it forms part of the basis of CWTS' bibliometric analysis (on which more below).

In total, we received records of 7,526 publications from University of Lubljana. This dataset contains quite a few duplicate publications, making it difficult to make exact statements about the unique number of publications contained in the dataset. As noted, the same difficulty already existed with the ESS bibliography in 2017. At the same time, CWTS' own searches yielded ESS-based outputs listed in Web of Science that are not included in the University of Ljubljana's data, meaning there may simultaneously be double-counting and incomplete coverage.

We present below the overall logged publication numbers from the ESS bibliography in 2017 and the publication numbers from the University of Ljubljana's efforts to continue monitoring ESS-based publications. However, in light of these difficulties we urge caution: the reliability and comparability of the two sets of indicators in the table below are limited. However, these data do suggest that, in line with the vastly increased user numbers, the number of known ESS-based publications has more than doubled. An additional caution here is that many of the newly added publication records may not have been produced since 2017, but had simply not yet been identified at the time.

Table 2 Publications data from the ESS Bibliography and Ljubljana university compared

Publication type	Logged in ESS Bibliography, March 2017*	Publication records from University of Ljubljana, June 2021	% increase
Journal articles	1,373	3,985	190%
Book chapters	343	988	188%
Conference papers	229	863	277%
Other (incl. working papers, reports, books, theses)	759	1,690	123%
Total	**2,704**	**7,526**	**178%**

*Source: https://www.europeansocialsurvey.org/docs/findings/ESS-Impact-study-Final-report.pdf, pp. 38

Despite the limited reliability, we judge it important to cite these figures, as they are the best available estimate of the number of ESS-based outputs currently in existence. In particular, these figures cover different publication types and publications in languages other than English

– unlike in some natural sciences, this plurality is especially important to take into account in the social sciences and humanities.

A more robust assessment of ESS-based output volume can be generated through our bibliometric analysis. However, the limitation here is that it includes only items that are listed on Web of Science – which has limited coverage of publication types other than journal articles and of non-English language publications.

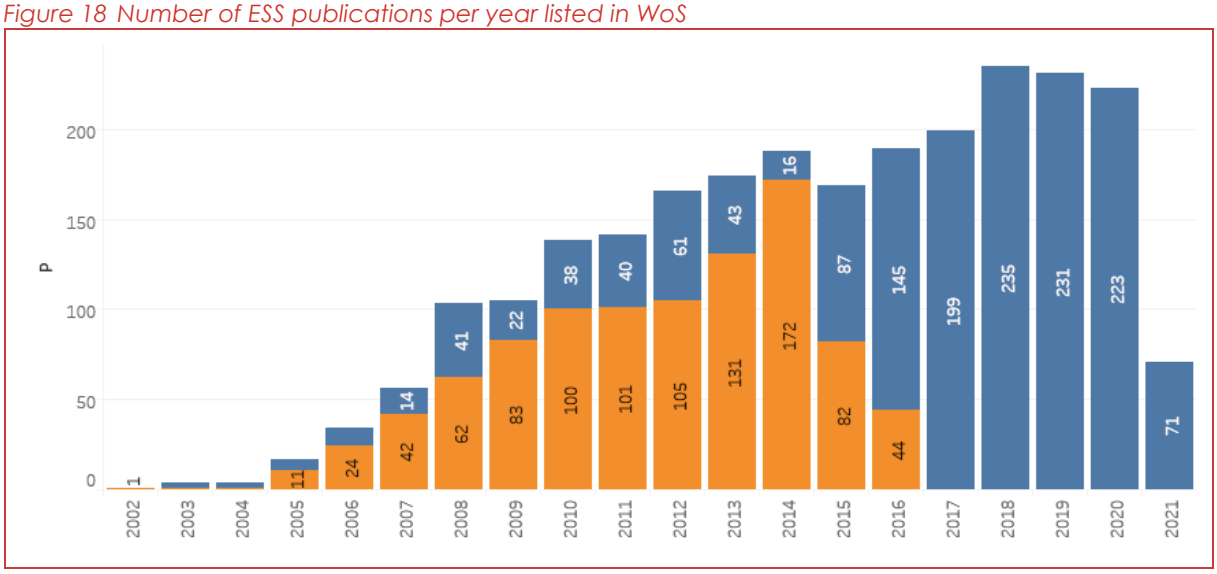
Of the 7,526 records received by University of Ljubljana, CWTS could identify a matching publication record in WoS for 2,374 records. There were 329 publications that appeared two or more times, resulting in 2026 unique publications.

In more detail, the ESS bibliography has 3,985 records that are journal articles, of which 2,352 records were matched in WoS, so that almost 60% of the journal articles are covered in WoS. As said, an unknown number of these 3,985 records are duplicated, but it gives an idea of what is covered in WoS. Of the 988 book chapters, only 2 have been identified in WoS, and from the 863 conference papers and 141 reports only 1 record was matched for each. Of the remaining types (most importantly books, working papers and theses) none were matched in WoS.

In addition to these 2,026 unique publications matched to WoS, CWTS identified 410 additional publications, looking for the term European Social Survey or its abbreviation ESS. Most of these (391) could be identified on the basis of the abstract, while some publications (19) could be identified on the basis of the title only. Additionally, we included 12 publications that were also included in the bibliometric analysis for the 2016/17 impact study, but which were not yet included.

In total, this resulted in 2,448 unique publications, which forms the basis for the bibliometric analysis in the remainder of this report. More information about the methodology is provided in Appendix A.4. Most of the 2,448 publications come from the most recent years, with about 230 publications per year in the last years (2018-2020). The number of publications for 2020 and 2021 may be underrepresented; authors may have not yet reported their publications to the online ESS bibliography. We observe a steady growth over the years, growing from only a few publications in the early 2000s to more than 100 publications per year around 2010 to reach over 200 publications per year in the most recent years.

Figure 18 Number of ESS publications per year listed in WoS



NB: We distinguish between the publications that were included in the 2016 bibliometric report and those that are only included in the current analysis.

In the previous bibliometric report about the ESS (CWTS, 2016), we reported 960 publications being included. Most of the 1488 additional publications in the current report are from after 2016. For the years 2015 and 2016 we see that relatively few publications were available in the previous analysis, but that many publications in those years are now included (Figure 18). This suggests that there is a certain delay with which publications are included in the ESS bibliography and this is likely to also be the case for the number of publications in 2020 and 2021. Interestingly, there are not only additional publications included in the current report for the years 2015 and later, also for earlier years the current analysis includes additional publications. These are most likely publications that were added to the ESS bibliography only later.

3.2 Headline bibliometric indicators

Not all publications are taken into account when performing the citation impact analysis that follows. We restrict this analysis to articles and reviews from 2019 or earlier. This results in 2,114 publications which are taken into account for citation impact analysis. Additionally, the open access analysis later in this section is restricted to publications that have a DOI, because we cannot determine the open access status for publications without a DOI. This results in 2,296 publications.

We report key indicators in Table 3. In total, all 2,114 publications included in citation analysis gathered 42,891 citations in total (TCS). We count citations up to and including 2020. This results in a mean number of citations (MCS) of 20.3 per publication.

Table 3 Headline bibliometric indicators

Indicator	Description	Grand Total	*In 2016 analysis*	
			No	*Yes*
P (full)	Total number of publications	**2,448**	*1,488*	*960*
TCS	Total number of citations	**42,891**	*14,554*	*28,337*
TNCS	Total normalised citations	**3,611.5**	*1,768.2*	*1,843.2*
MNCS	Mean normalised citation score	**1.71**	*1.51*	*1.96*
MNJS	Mean normalised journal score	**1.42**	*1.35*	*1.50*
P(top 10%)	Publications in the top-10% most-cited by field	**452.5**	*212.0*	*240.5*
PP(top 10%)	Percentage of publications in the top-10% most-cited by year and field	**21%**	*18%*	*26%*
PP(OA)	Percentage of publications published in open-access format	**39%**	*43%*	*34%*

Publications that are more recently published have had less time to attract citations. Additionally, fields differ in their citation practices, and publications in some fields have more citations than in other fields. We correct for the effect of both the field and the year by normalising the citations received. We do so by dividing the citation score for each publication by the average number of citations that publications in the same field and year received. This results in the normalised citation score (NCS). If the NCS of a publication is above 1, it means that the publication is cited more often than other publications from the same year and field on average. If the NCS of a publication is below 1, it is cited less often than average.

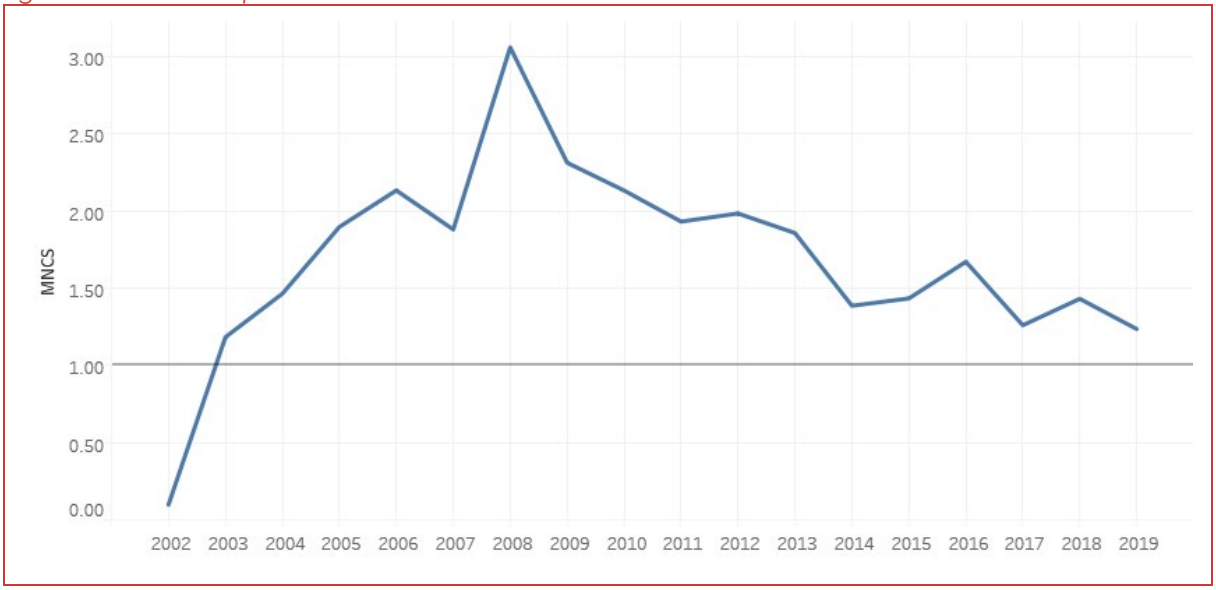
In total, the publications received 3,611 normalised citations (TNCS), resulting in a mean normalised citation score (MNCS) of 1.7. This means that the ESS publications are 70% more highly cited than average. This is slightly lower than the impact reported previously (CWTS, 2016). There are many possible reasons why the impact in more recent years is lower. It could be that with the higher uptake of ESS in publications there is also less impactful work being done with it. There may be a greater share of researcher publishing ESS-based work who are from career stages, regions or institutions that generally have lower citation metrics. For the MNCS specifically – though not for the PP(top 10%) – there may also be a statistical effect, whereby a small number of especially highly cited papers would have had a greater effect for the smaller overall number of publications used in the 2016 analysis. There may well be additional reasons. However, we stress that this decline should not overshadow the fact that the citation metrics for ESS-based work still remain substantially higher than field-adjusted averages – and indeed for institutional averages, as we show below.

The impact of journals in which the publications appear can be similarly quantified. For each journal, we quantify for each field and year the MNCS of all the publications appearing in the journal. We call this the normalised journal score (NJS). Averaging this score over all publications then yields the mean normalised journal score (MNJS), which is 1.4 for the ESS publications. This means that on average, the citation impact of articles (1.7) is higher than the citation impact of journals (1.4) in which is published.

Citations are quite skewed, with most publications being cited only a few times and a few publications being highly cited. The mean of such a skewed distribution can be quite volatile: a few highly cited publications can easily inflate the mean, without being representative of the rest of the publications. For that reason, we typically also consider a more robust variant, focusing on publications that reach the top 10% of the citation distribution of their field and year. In order to ensure that exactly 10% of the publications belong to the top 10%, it is typically required to consider publications that straddle the boundary as belonging to the top 10% partially. For example, if the cut-off for the top 10% is drawn at 5 citations, it means that publications above 5 citations fully belong to it and publications below 5 citations fully do not belong to it. Publications that have exactly 5 citations then only partially belong to it. The total number of publications that belong to the top 10% is 452.5, which is 21% of the publications. This is more than twice as high as the average. This shows that the relatively high impact is not only due to a few outliers.

The impact over time shows a peak around 2008 with the MNCS reaching just above 3.0 (Figure 19). After that, the impact gradually declines and achieves an impact of 1.2 in 2019. A similar observation was made in the previous report (CWTS, 2016), where more recent years also showed a lower impact. Part of the explanation is that ESS publications take slightly longer to realise their impact. In the previous report, publications in 2012-2014 were reported to have an MNCS of 1.6, while the MNCS for the same period is now 1.7. However, this effect is rather small, suggesting that the impact of ESS-based publications really does decline.

Figure 19 Citation impact over time



3.3 Results per country

Many publications are written by multiple authors, and some authors are affiliated to multiple institutions. We therefore typically count publications fractionally, in particular when reporting citation indicators. That is, we divide each publication across their multiple affiliations. Without counting publications fractionally, we count some publications multiple times, sometimes complicating interpretation. Unfortunately, fractional publication counts are sometimes also difficult to interpret, and we therefore present both. For more details on how we fractionalise, please Appendix A.4.

Affiliation data in WoS can be quite heterogeneous due to various name variants, spellings and abbreviations of the same institution. CWTS spends a substantial amount of time cleaning and improving institutional affiliations. Nonetheless, not all affiliations are associated with cleaned organisations, and therefore also do not have country-level association. For 803 publications, some cleaned affiliation information is missing and for 125 publications, no cleaned affiliation information is available at all, resulting in 2,323 publications that can be used for this analysis.

The United Kingdom is the largest producer of ESS publications, having produced 436 publications, and 171.7 fractional publications, implying that the United Kingdom represents almost 40% of the co-authors of its 436 publications on average. Its impact is quite high, with an MNCS of 2.26 and a PP(top 10%) of 29%.

Germany has slightly fewer publications (337), although it has many more fractionally counted publications (238.1), resulting in a German authorship contribution of about 70%. Its impact is quite high, with an MNCS of 1.88 and a PP(top 10%) of 24%.

The United States is the largest non-ESS-member producer of ESS publications, with 315 publications (212.4 fractionally counted). Its impact is the highest among the largest countries in terms of ESS publications, with an MNCS of 2.95 and a PP(top 10%) of 38%.

The Netherlands is the third largest member country in terms of ESS publications, with 292 publications (208.0 fractionally counted) and an impact comparable to Germany.

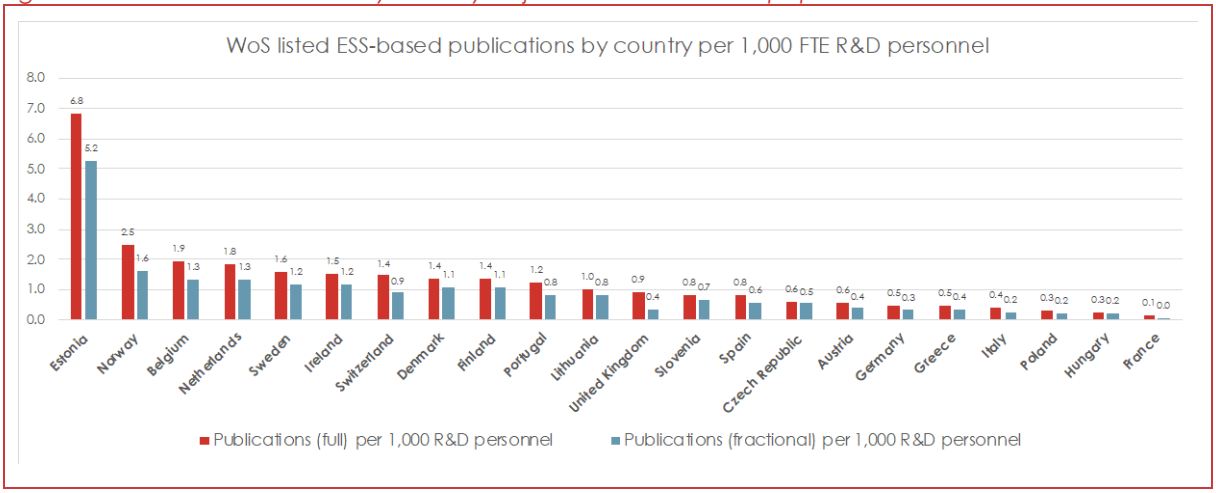
Table 4 Country level bibliometric indicators

	P (full)	P (frac)	MNCS	PP(top 10%)
United Kingdom	436	171.7	2.26	29%
Germany	337	238.1	1.88	24%
United States	315	212.4	2.95	38%
Netherlands	292	208.0	1.94	28%
Spain	190	130.2	1.11	12%
Belgium	184	126.8	1.74	23%
Sweden	143	105.4	1.50	22%
Italy	136	83.1	1.97	25%
Norway	121	78.3	1.60	20%
Switzerland	118	72.4	1.88	25%
Denmark	86	66.3	1.73	20%
Israel	83	55.2	1.72	22%
Portugal	74	48.9	1.07	15%
Finland	70	55.6	1.38	13%
France	57	21.3	1.47	17%
Ireland	56	43.2	1.07	8%
Canada	50	26.3	2.10	33%
Czech Republic	49	41.8	0.42	0%
Austria	48	31.1	1.08	5%
Russia	47	22.9	1.08	10%
Poland	46	29.5	0.54	3%
Estonia	44	33.8	0.83	4%
Australia	40	19.8	2.23	15%
Greece	25	19.2	0.86	6%
Turkey	23	16.3	0.83	5%
Hungary	15	12.2	0.53	0%
Slovenia	14	11.4	0.84	6%
Lithuania	13	10.4	0.17	1%
Bulgaria	8	6.8	0.63	13%
Slovakia	7	4.4	0.73	2%
Cyprus	7	5.5	0.60	0%
Iceland	4	2.0	1.08	12%
Latvia	3	2.1	3.27	30%
Croatia	3	2.7		

Includes the top 25 largest countries in terms of number of ESS-based publications, and additionally any country that participated in most recent round (Round 10) of the ESS. Countries that have not participated in the ESS are shown in grey

When adjusted for researcher population, a different picture emerges in terms of publication numbers: Estonia has by far the highest rate of ESS-based publications per 1,000 R&D personnel.

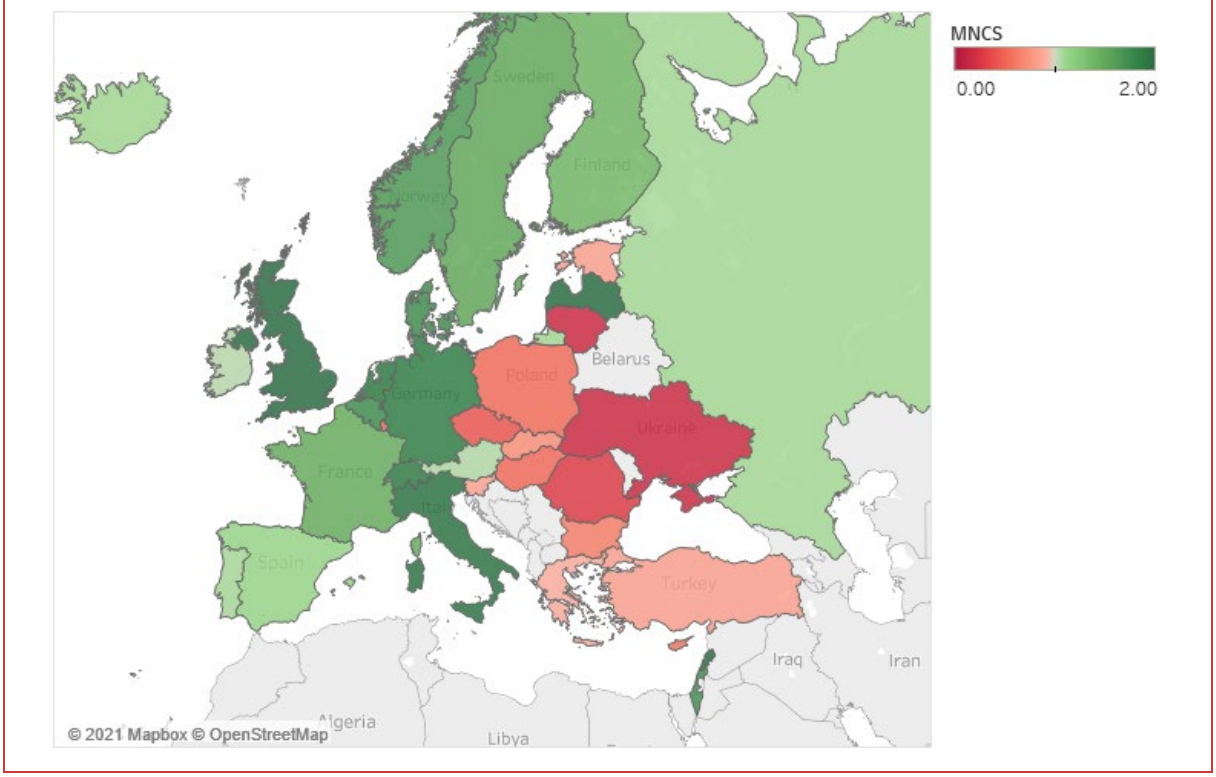
Figure 20 Publication numbers by country adjusted for researcher population



Excludes countries with fewer than 10 (full) publications and countries not included in Eurostat figures. Demographic data: R&D personnel by sector of performance, professional position and sex [rd_p_persocc]: Full-time equivalent (FTE), Eurostat 2019

A clear pattern emerges when plotting the citation impact in a geographical map (Figure 21). It then becomes clear that the impact is mostly above 1 in Western Europe, whereas the impact is most often lower in Eastern Europe. This is an indication that publications from Eastern Europe are taken up less by the wider academic community. Although this pattern seems quite clear, there is also a higher degree of uncertainty because most Eastern European countries show fewer publications. The reason for this pattern is unclear.

Figure 21 Map of impact (MNCS) per country.



NB: There are no ESS publications for countries that are greyed out

3.4 Results per institution

As expected, based on the country level results presented above, the largest institutions in terms of number of ESS publications are found in Western Europe (Table 5). Almost all of the largest institutions perform above average. The highest impact is shown by University of Oxford (MNCS of 3.2), which is also one of the largest institutions by output volume with 75 publications, although this is only 28.1 when fractionally counted, meaning Oxford represents only about 37% of the authorships on average.

The largest institution is the Katholieke Universiteit Leuven with 119 publications (77.4 fractionally counted), with a high impact of 1.88. The University of Cologne also show a high impact with an MNCS of 2.9, while having a similar number of fractionally counted publications (23.8) as Oxford. Utrecht University shows an almost equally high impact with an MNCS of 2.8. When plotting the institutions in a geographic map (Figure 22),it seems that Belgium and the Netherlands, and the Ruhr area in Germany are particularly heavy users of the ESS, and their publications typically have a high citation impact.

The institutions highlighted in the previous paragraph are generally well-known institutions. It is informative to compare the impact of ESS publications to publications from those institutions more generally. We will do so based on the impact as calculated in the Leiden Ranking,[6] in the main field of social science and humanities (SSH), which is the field in which the ESS is mostly used. The first thing to notice is that all institutions show a higher impact of ESS publications than of SSH generally in the Leiden Ranking. Hence, ESS publications achieve a higher impact than what can be expected from SSH publications by those institutions. The reason for this is unclear; perhaps authors who are using the ESS in their research tend to perform more impactful work, or perhaps the use of the ESS itself facilitates uptake of such publications. The second thing to notice is that the impact of ESS publications is associated with the impact in SSH. That is, institutions that achieve a higher impact in SSH also tend to show a higher impact for ESS publications. The impact is roughly somewhere between 1-3 times higher for ESS publications than for SSH publications from those institutions.

Table 5 Institutional level bibliometric indicators

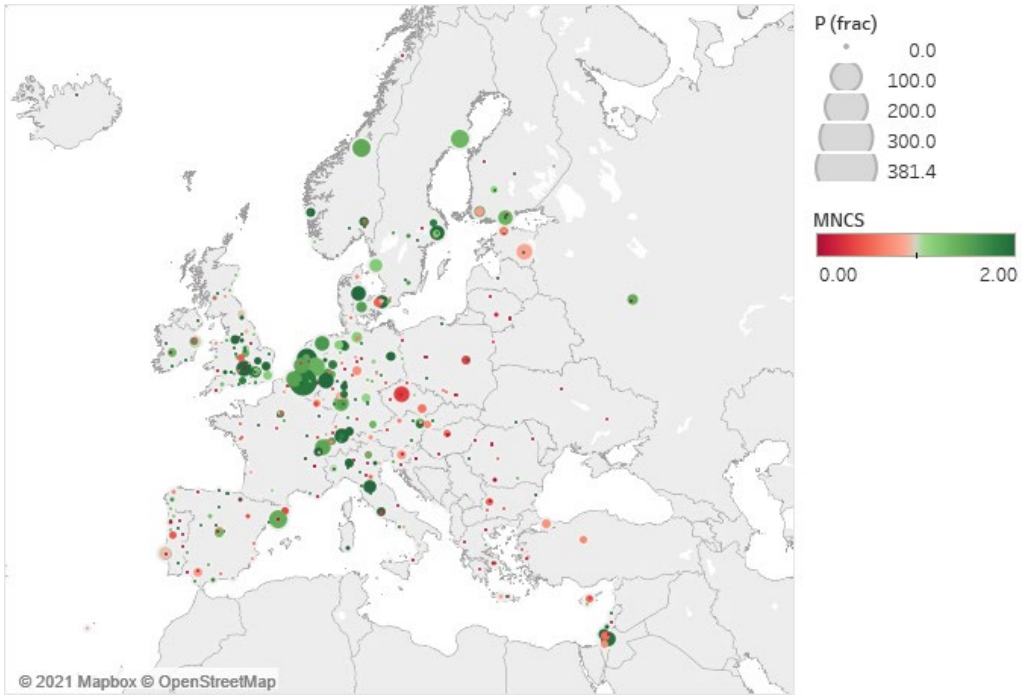
	Institution	ESS-based publications				Benchmark: Institutional Leiden Rankings for SSH	
		P (full)	P (frac)	MNCS	PP(top 10%)	*MNCS*	*PP(top 10%)*
1	Katholieke Universiteit Leuven	119	77.4	1.88	27%	*1.04*	*10.6%*
2	University of Oxford	75	28.1	3.20	39%	*1.48*	*16.3%*
3	University of Amsterdam	69	41.9	2.30	37%	*1.29*	*14.2%*
4	Pompeu Fabra University	57	29.4	1.45	18%	*1.03*	*10.7%*
5	Erasmus University Rotterdam	55	26.6	1.51	18%	*1.20*	*13.0%*
6	Norwegian University of Science and Technology	53	30.5	1.48	19%	*1.06*	*10.0%*
7	Radboud University	51	37.9	1.40	19%	*1.14*	*12.0%*
8	London School of Economics and Political Science	47	13.0	1.98	39%	*1.48*	*16.4%*

[6] www.leidenranking.com

	Institution	ESS-based publications				Benchmark: Institutional Leiden Rankings for SSH	
		P (full)	P (frac)	MNCS	PP(top 10%)	MNCS	PP(top 10%)
9	University of Zurich	46	20.6	2.60	48%	*1.25*	*14.7%*
10	University of Cologne	46	24.8	3.06	40%	*1.02*	*10.9%*
11	Umeå University	42	34.2	1.37	22%	*0.77*	*5.7%*
12	Tilburg University	42	25.7	2.00	30%	*1.24*	*14.6%*
13	University of Mannheim	41	25.8	1.37	18%	-	-
14	Ghent University	40	27.8	1.54	17%	*1.00*	*10.1%*
15	The Hebrew University of Jerusalem	39	22.4	1.95	25%	*0.92*	*9.3%*
16	University of Lausanne	38	24.9	1.51	19%	*1.02*	*9.6%*
17	University of Helsinki	38	23.5	1.41	17%	*0.89*	*8.4%*
18	National Research University Higher School of Economics (HSE)	36	13.5	1.45	12%	*0.71*	*6.2%*
19	European University Institute	36	18.5	2.08	32%	-	-
20	Utrecht University	35	22.8	2.81	35%	*1.30*	*14.1%*
21	University of Tartu	34	26.5	0.87	3%	*0.73*	*6.5%*
22	Stockholm University	33	22.1	1.99	25%	*1.03*	*10.2%*
23	University of Groningen	31	19.4	1.63	12%	*1.09*	*11.3%*
24	ISCTE - University Institute of Lisbon	31	17.5	0.96	13%	-	-
25	Aarhus University	29	23.6	2.05	20%	*1.08*	*10.9%*
26	University of Copenhagen	28	17.2	2.41	42%	*1.08*	*10.3%*
27	University College London	28	11.1	4.10	42%	*1.47*	*17.6%*
28	Harvard University	27	13.5	5.90	59%	*1.80*	*21.6%*
29	Czech Academy of Sciences	26	24.0	0.33	0%	-	-
30	Universidade de Lisboa	25	12.9	1.78	30%	*0.77*	*7.2%*
31	The University of Manchester	25	9.1	2.64	34%	*1.18*	*13.0%*
32	Vrije Universiteit Amsterdam	23	10.7	1.85	38%	*1.26*	*13.8%*
33	University of Kent	23	7.4	1.18	11%	*1.18*	*12.9%*
34	University of Gothenburg	23	18.1	1.20	16%	*0.94*	*8.4%*
35	Tel Aviv University	22	14.2	2.49	39%	*0.81*	*7.8%*
36	Leibniz Institute for Social Sciences (GESIS)	22	15.0	1.56	19%	-	-
37	University of Bergen	21	9.9	2.27	23%	*1.11*	*10.7%*
38	Universität Hamburg	21	13.3	1.18	14%	*0.95*	*8.8%*

NB: list includes all institutions with more than 20 confirmed outputs (non-fractional)

Figure 22 Map of impacts per institution



Only institutions with more than 20 publications are included. Not all institutions are included in the Leiden Ranking.

3.5 Research profile

Journals in WoS are classified as belonging to certain subject categories. These subject categories give an idea of what type of research is mostly being done using the ESS. There are two challenges with the subject categories of WoS. First of all, journals can be classified as belonging to multiple subject categories. Similarly to institutional affiliations, we therefore count publications fractionally in each subject category to which they have been assigned. For example, if a journal is assigned to both Sociology and Political Science (e.g. Socio-Economic Review) each paper in such a journal will be counted as belonging to Sociology for 50% and to Political Science for 50%.

A second difficulty is the subject category of multidisciplinary research, which covers multidisciplinary journals such as PLOS ONE or Nature. The multidisciplinary subject category itself says little about the type of research that is being conducted, and for that reason we fractionally reassign each publication in this category as belonging to the subject categories to which the publication refers.

Table 6 Top 10 largest subject categories

	P (full)	P (frac)	MNCS	PP(top 10%)	PP(OA)
Sociology	657	504.1	1.73	21%	35%
Political Science	592	467.1	2.21	28%	35%
Economics	243	151.1	1.87	25%	53%
Social Sciences, Interdisciplinary	279	148.1	1.27	16%	33%

	P (full)	P (frac)	MNCS	PP(top 10%)	PP(OA)
Public, Environmental & Occupational Health	174	125.0	1.58	15%	68%
Psychology, Social	147	99.9	1.71	25%	39%
Demography	125	90.7	1.97	27%	46%
Psychology, Multidisciplinary	94	55.0	1.36	18%	58%
Public Administration	106	54.0	1.58	22%	35%
Social Issues	99	44.7	1.57	23%	44%

The largest subject category is Sociology, with 504.1 fractionally counted publications. Political Science is only slightly smaller, with 467.1 fractionally counted publications. These two subject categories together represent almost 40% of all publications. The smaller subject categories are substantially smaller. The next largest subject category is Economics, with 151.1.0 fractionally counted publications with the number of publications in other subject categories gradually tapering off. The impact is especially high in Political Science, with an MNCS of 2.2 and a PP(top 10%) of 28%.

Germany and the Netherlands are most active in Sociology, with respectively 53.9 and 52.8 fractionally counted publications[7], with the United States the third most active with 36.0 fractionally counted publications. In Political Science the United States is by far the largest with 71.8 fractionally counted publications, with Germany having only 50.0 fractionally counted publications. The United Kingdom has 33.8 publications and the Netherlands slightly less, 31.4. The impact of the United States is high in both Sociology and Political Science with an MNCS of respectively 3.3 and 3.1. The impact of the Netherlands is especially high in Political Science, with an MNCS of 3.6 and almost 60% of its publications being in the top 10%. The reason for the differences in impact across subject categories is unclear.

For a more detailed view we use the CWTS publication level classification. This is an algorithmically derived classification of all publications in WoS, with each publication classified in one of the 4140 so-called micro-fields. This yields a highly granular view of the scientific landscape. In addition, it does not suffer from problems stemming from multidisciplinary journals. However, it does have a limitation, as the algorithmically derived fields do not have clear descriptions. We address this by characterising these micro-fields with algorithmically derived terms, extracted from titles and abstracts (For more details, please see Appendix section A.4).

The ESS publications are dispersed across quite a number of different micro-fields. The largest micro-field with 344 publications has to do with voter turnout and seems to focus on the US. The second largest micro-field with 173 publications focuses on social capital and social trust. The third largest micro-field deals with the welfare state. The fourth largest micro-field deals with values such as gratitude, happiness and wellbeing. Together these represent about one third of all publications.

[7] Note that we here fractionalise for both subject categories and institutional affiliations.

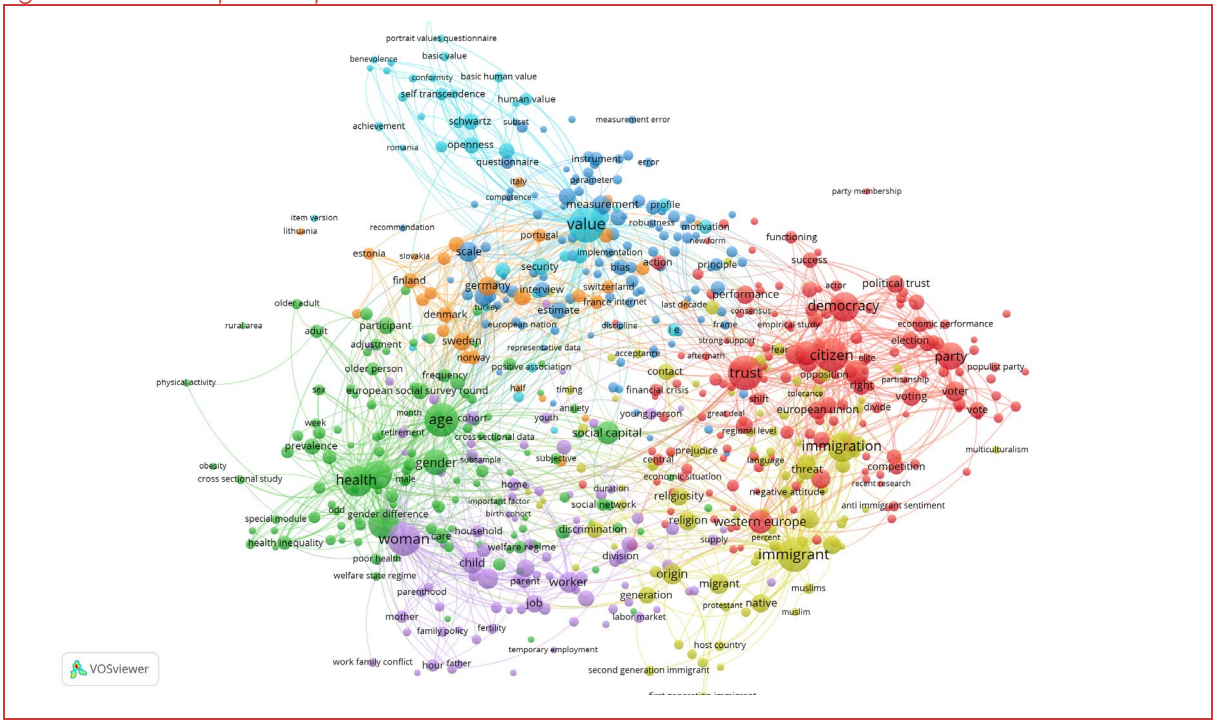
Table 7 Results for the largest micro-fields

Terms	P (full)	MNCS	PP(top 10%)	PP(OA)
voter turnout, us house, electoral system, political knowledge, voter	344	1.85	24%	37%
social capital, older adult, volunteering, social trust, health	173	1.76	21%	32%
welfare state, policy transfer, pension reform, policy diffusion, social investment	159	2.08	29%	49%
gratitude, happiness, subjective well, life satisfaction, character strength	154	1.29	13%	40%
socioeconomic inequality, health inequality, income, population health, marital status	118	1.13	8%	61%
work family conflict, work life balance, gender wage gap, housework, job satisfaction	112	1.23	11%	32%
individualism, collectivism, cultural difference, values, self construal	84	1.56	21%	36%
survey, web, response rate, effect, internet	78	0.89	8%	45%
cohabitation, coparenting, child support, divorce, interparental conflict	65	1.38	16%	43%
bolivia, populism, radical right, venezuela, ecuador	58	3.01	36%	37%

To complement this insight, we additionally include a term-map (Figure 23 Term-map of ESS publicationsFigure 23). This shows terms extracted from titles and abstracts, and terms are located close to each other if they co-occur frequently. The axes themselves don't have any special meaning, it is only the relatively distances that are relevant. The size of the terms reflect the number of publications.

The term-map shows a number of different topics that are being covered by ESS publications, as indicated by the colours in the term-map. At the top, the topic in light-blue seems to revolve around (social) values. The topic in dark-blue concerns data gathering and measurements. The topic in red seems to be mostly about politics. The topic in yellow is about migration, and especially immigration also seems closely related to politics. In purple, the topic seems to be about labour, education and family composition, also including gender aspects. The topic in green seems to relate to health issues, and also touches on gender aspects. Finally, the topic in orange seems to concern various countries, presumably related to country level comparisons. Please note that the delineations between these topics are not absolute: boundaries between topics are fluid.

Figure 23 Term-map of ESS publications



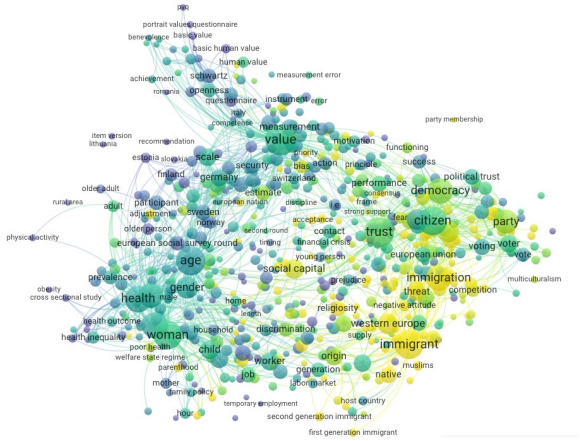
Each circle represents a term extracted from titles and abstract from ESS publications. Connections between two circles represent in how many publications the two terms have co-occurred (only the 1000 strongest connections are shown). More frequently co-occurring terms are located more closely together, while less frequently co-occurring terms are more distant from each other. Colours of the nodes represents a clustering of the terms, denoting putative topics.

The analysis also enables insights into what topics are prevalent in which countries and institutions. Below we give just a few examples of this. In these visualisations, the colour coding indicates what percentage of publications on each topic (globally) stem from the country or institution in question. Yellow indicates the highest share and purple the lowest (often meaning 0%, i.e. no publications).

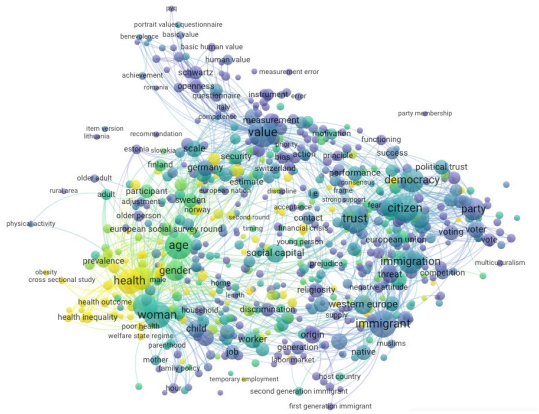
In the examples below, the graphics illustrate that the USA has an especially high share of publications in topics around immigration, whilst Norway has a high proportion of publications in areas around health and health inequality. The University of Oxford has a high proportion of publications in topics concerned with voting behaviour, while the University of Helsinki has a high proportion of global publications in the area of human values.

Figure 24 Main publication topics in selected countries and institutions

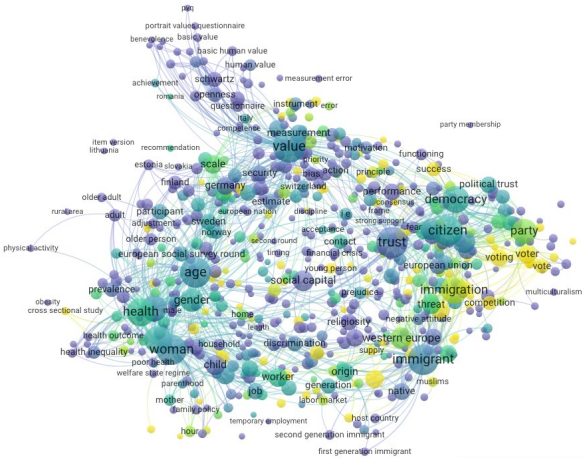
United States:



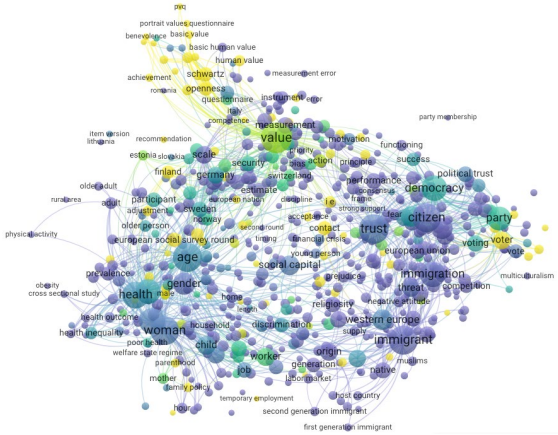
Norway:



University of Oxford:



University of Helsinki:



NB: the scale (i.e. percentages signified by the colours) vary in each case, as the analysis tool adjusts these for each case. To give a rough sense of scale: the brightest yellow indicates a share of around 15% of global publications on a topic for the USA, 10% for Norway, 3% for the University of Oxford, and 4% for University of Helsinki.

In the above examples, there are fairly clear areas where each country/institution has especially large shares of publications, but in many others, publications are somewhat evenly spread out over the various ESS topics and clusters. To generate more graphics like the ones above for other countries and institutions, the data tool is available online.

Figure 25 A tool to visualise publication topics in selected countries and institutions

The tool is available at the following link:

https://app.vosviewer.com/?json=https://zenodo.org/record/5752190/files/term_map.json?download=1

It enables the user to generate topic-maps for the top-10 countries and top-25 institutions by publication numbers. We note that the tool is permanently available, but it presents only a snapshot based on the bibliometric analysis conducted in 2021: it does not stay up-to-date.

4 Teaching impact

In our country level research, we find ample use of the ESS for teaching purposes. The benefits of the ESS for undergraduate and postgraduate teaching one again closely reflect our findings from the 2016/17 ESS impact study.[8] The methodological rigour and robustness of the ESS makes it an excellent teaching tool, whilst the breadth of topics also ensure its content is relevant to a wide range of different courses.

In particular, the ESS is used for methodologically focussed courses, including general introductory courses to social research and statistical methods, as well as more advanced courses on specific statistical techniques typically occurring at later stages of undergraduate or master's courses.

While we quantify student use in the next sub-section, we present below a selection of methods-focused courses found in our country-level research, with course titles and links to course pages or documents where available.

Table 8 Examples of methodological courses and programmes using the ESS

Country	Institution	Course/Programme
Austria	University of Vienna	Quantitative Methods in Empirical Social Sciences – (Quantitative Methoden der empirischen Sozialforschung)[9]
Austria	Universität Innsbruck	SE Advanced Statistics[10]
Bulgaria	University of National and World Economy	Course on statistical associations[11]
Czech Republic	Charles University in Prague	Introduction to quantitative methods of social sciences
Czech Republic	Charles University in Prague	Quantitative data analysis
Czech Republic	Masaryk University	Social science methodology
Germany	Goethe University Frankfurt	Comparative Social Research Using Multilevel Modelling in R – (Vergleichende Sozialforschung mit Mehrebenenmodellen in R)
Ireland	University College Cork	Methods course[12]
Lithuania	VDU	Analysis of Quantitative Data"[13] (bachelor's programme) and "Issues in Quantitative Research Methods in Sociology"[14] (master's programme)

[8] http://www.europeansocialsurvey.org/docs/findings/ESS-Impact-study-Final-report.pdf, section 6.3, pp. 57-58

[9] https://ufind.univie.ac.at/de/course.html?lv=210014&semester=2020W

[10] https://vis.uibk.ac.at/public/lfuonline_lv.details?sem_id_in=19W&lvnr_id_in=408111

[11] http://blogs.unwe.bg/tkineva/en/

[12] https://www.ucc.ie/admin/registrar/modules/?mod=SS3031

[13] https://www.vdu.lt/lt/study/subject/3612/

[14] https://www.vdu.lt/lt/study/subject/583/

Country	Institution	Course/Programme
Netherlands	University of Amsterdam	Methods of Communication Research and Descriptive Statistics ('Methoden van Communicatieonderzoek en Beschrijvende Statistiek')[15]
Netherlands	University of Amsterdam	Master's course, 'Advanced Multivariate Modelling'
Norway	University of Bergen	Methods in the Social Sciences[16]
Portugal	ISCTE	Research Methods and Techniques in Social Sciences[17]
Slovenia	University of Ljubljana	Introduction to Social Science Research[18]
Switzerland	University of Zurich	Minor in Methods-Data-Society[19]

In our country-level research, we also found many examples of thematic courses. These range from Democracy and voting behaviour to human values, family and deviance. We provide a list of examples below. As above, we stress that this list is in no way comprehensive – it is simply intended to give a sense of the range of different courses that make use of the ESS.

Table 9 Examples of thematic courses and programmes using the ESS

Country	Institution	Course/programme
Austria	University of Salzburg	Quantitative Migration Studies (Quantitative Migrationsforschung)[20]
Belgium	university of Antwerp	Population, family and life
Finland	University of Turku	Comparative Welfare States[21]
Germany	University of Mannheim	Methods in Political Sociology: Quantitative Methods of Research on Attitudes and Voting Behaviour – (Methoden der politischen Soziologie: Quantitative Methoden der Einstellungs- und Wahlforschung).
Hungary	Eötvös Loránd University	Course focussing on social deviance
Ireland	UCD	Master's of Public Policy[22]
Norway	University of Bergen	Populism and the Consequences for Liberal Democracy[23]
Norway	University of Bergen	Democratic transformations in Europe: Trends and Implications[24]

[15] http://www.cwdw.socsci.uva.nl/mcobs/8.1.php

[16] https://www.uib.no/en/course/MET102

[17] https://fenix.iscte-iul.pt/disciplinas/M8065/2020-2021/1-semestre/fuc

[18] https://www.ucl.ac.uk/prospective-students/undergraduate/degrees/social-sciences-bsc

[19] https://www.ipz.uzh.ch/de/studium/MA/minor-methods-data-society-de.html

[20] https://www.plus.ac.at/erziehungswissenschaft/fachbereich/schwerpunkte/bildungsforschung/premisa-projektgruppe-empirische-migrationsforschung/

[21] https://opas.peppi.utu.fi/en/course/INWS0010/20742

[22] https://hub.ucd.ie/usis/!W_HU_MENU.P_PUBLISH?p_tag=PROG&MAJR=W279

[23] https://www.uib.no/en/course/SAMPOL226

[24] https://www.uib.no/emne/SAMPOL223

Country	Institution	Course/programme
Norway	University of Bergen	Democracy and Democratization[25]
Portugal	ISCTE	Contemporary Social Inequalities[26]
Slovenia	University of Ljubljana	European Values and Attitudes[27]
Switzerland	University of Bern	Comparative and Swiss Politics[28]
UK	University of Exeter	Course on Religion[29]
UK	University of Manchester	Course in Criminology[30]

The extent to which the ESS is used in the above courses varies and it has not been possible in all cases to establish its importance within each course (though at minimum it features as a data source to illustrate social trends, and is in almost all cases either the 'standard' dataset for students to conduct exercises or an option for use in dissertations). We note the following additional examples of teaching activities where the ESS has an especially prominent place, for example, through integration with ESS-based textbooks or other especially close association with the ESS:

- The University of Tartu also published an online textbook *Learning Base of Social Analysis Methods and Methodology* (Sotsiaalse Analüüsi Meetodite ja Metodoloogia õpibaas). Published in 2014, the online textbook was written to introduce students to social science data collection and analysis methods and tools. More importantly, it teaches students how to use SPSS and the online NESSTAR programme to analyse ESS data. Furthermore, ESS data are constantly used as reference material in the examples in the textbook (for example, when discussing the use of specific analysis methods, ESS data illustrates their application).[31] This online textbook was compiled by a lecturer at the Institute of Social Sciences of the University of Tartu, with the aim of providing an Estonian-language, reader-friendly and reliable source for being introduced to analysis methodology
- Warsaw School of Economics alone accounts for 41% of the confirmed users by institution. Furthermore, the Warsaw School of Economics is not only an institutional hotspot in Poland – it is among the top 10 institutions by user count across all countries analysed in this study

[25] https://www.uib.no/en/course/SAMPOL115

[26] https://fenix.iscte-iul.pt/disciplinas/M8065/2020-2021/1-semestre/fuc

[27] https://www.fdv.uni-lj.si/en/news-and-information/subjects/9111

[28] https://www.wiso.unibe.ch/studies/study_programs/master_of_arts_in_political_science_comparative_and_swiss_politics/index_eng.html

[29] https://socialsciences.exeter.ac.uk/sociology/current/undergraduatemodules/2019-20/sociology/module/?moduleCode=SOC2116&ay=2019/0 https://www.manchester.ac.uk/study/undergraduate/courses/2021/07052/ba-criminology/course-details/CRIM20441#course-unit-details

[30] https://socialsciences.exeter.ac.uk/sociology/current/undergraduatemodules/2019-20/sociology/module/?moduleCode=SOC2116&ay=2019/0 https://www.manchester.ac.uk/study/undergraduate/courses/2021/07052/ba-criminology/course-details/CRIM20441#course-unit-details

[31] University of Tartu (2014). Sotsiaalse Analüüsi Meetodite ja Metodoloogia õpibaas. Available at: https://samm.ut.ee/

(ranking 10th). One of the contributing factors to this is the use of ESS and textbooks analysing ESS data within lectures that teach methodology in social sciences. By 2021, the lecture "Methods and techniques of social research" ("Metody i techniki badań społecznych") used ESS as a best practice example of international social research in teaching about representative samples for national level research, developing methodology, collecting data and formulating research results and conclusions. The lecture also includes the textbook "The European Social Survey and Other International Survey Research. What can you learn from comparative analyses?" ("Europejski sondaż społeczny a inne międzynarodowe badania surveyowe. Czego można nauczyć się z analiz porównawczych?") in the list of additional literature recommended for students[32]

- The Nuffield Foundation, a large charitable trust, in association with the ESRC and Higher Education Funding Council for England fund the £19.5m Q-Step Programme to support the teaching of quantitative methods in the UK.[33] Of the top ten UK institutions by registered users (Table 1), seven have an established Q-Step Centres on campus. Each Q-Step Centre offers undergraduate and postgraduate quantitative courses, although the number varies at each institution. An example of a Q-step course can be found at the University of Warwick with the Fundamentals in Quantitative Research Methods where essays and exercises will be derived from the ESS[34]
- The University of Essex has developed a MSc in Survey Methods for Social Research. Although still small, with an average of 6 students per year, the course incorporates ESS data and methodology to teach new survey specialists from around the world. Some of these students have even completed internships at the ESS ERIC as part of their coursework. These students have generally gone on to work at national research institutions in their home countries

4.1 Institutional hotpots

The original ESS impact study of 2016/17 highlighted that whilst ESS user data capture the 'true' numbers of non-student users well, the number of student users are likely higher than what the ESS user statistics suggest. This owes to the fact that many lecturers may download ESS data themselves and convert the data into exercises for their students, who in turn never actually register with the ESS. In our research for the present study, several interviewees note that this issue likely still persists to some extent.

However, we can also note that the universities listed for the courses noted above typically also have relatively high numbers of registered ESS users. In other words, while ESS user statistics may not comprehensively capture the full volume of student users, they do provide a helpful proxy, so user statistics can be used to highlight teaching hotspots.

ESS users are asked to declare their institution in a freeform text field when registering. We conducted extensive data cleaning, ensuring that institutions' different spellings, abbreviations, common mis-spellings and names in different languages are harmonised, in order to facilitate an overview of institutions with the highest user numbers.

There are three caveats. First, some less common mis-spellings may not have been captured by our analysis. Second, some users do not specify an institution (e.g. some just generically note

[32] SGH Warsaw School of Economics (2021). Methods and techniques of social research. Available at: https://usosweb.sgh.waw.pl/kontroler.php?_action=katalog2/przedmioty/pokazPrzedmiot&kod=135400-D

[33] https://www.nuffieldfoundation.org/students-teachers/q-step

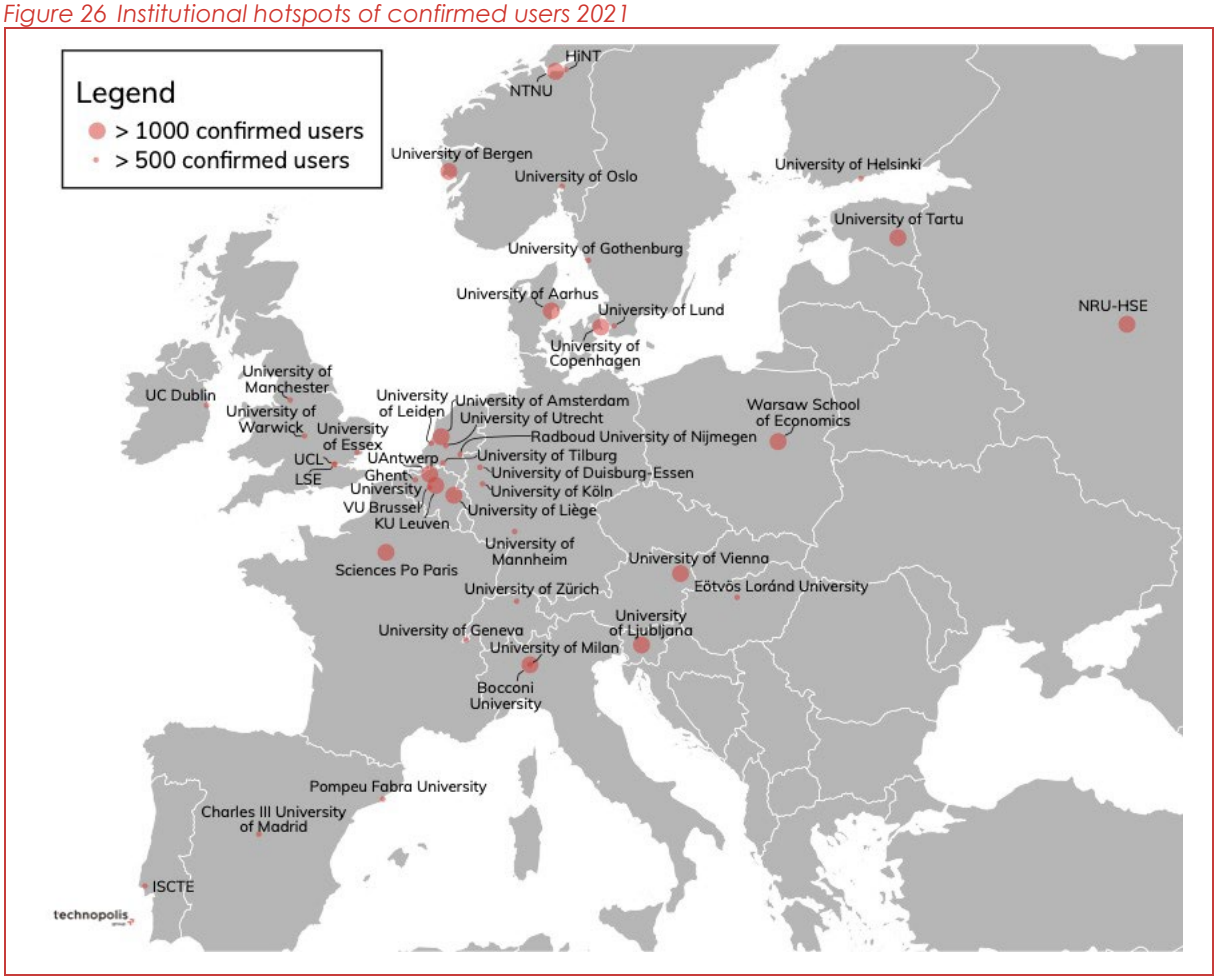
[34] https://warwick.ac.uk/fac/cross_fac/q-step/study/modules/qs905/

'university' in the entry-field). Third, and as mentioned, many students never register at all and are instead given ESS-based exercises by their teachers. In the following figures, we therefore speak of 'confirmed' users to indicate that there may be more that are not captured by the data.

We focus in here only on institutions with a high user count: whilst a small number of registered users at an institution may simply indicate the presence of a research group working with ESS data, user numbers in the hundreds almost certainly indicate use of the ESS in teaching contexts.

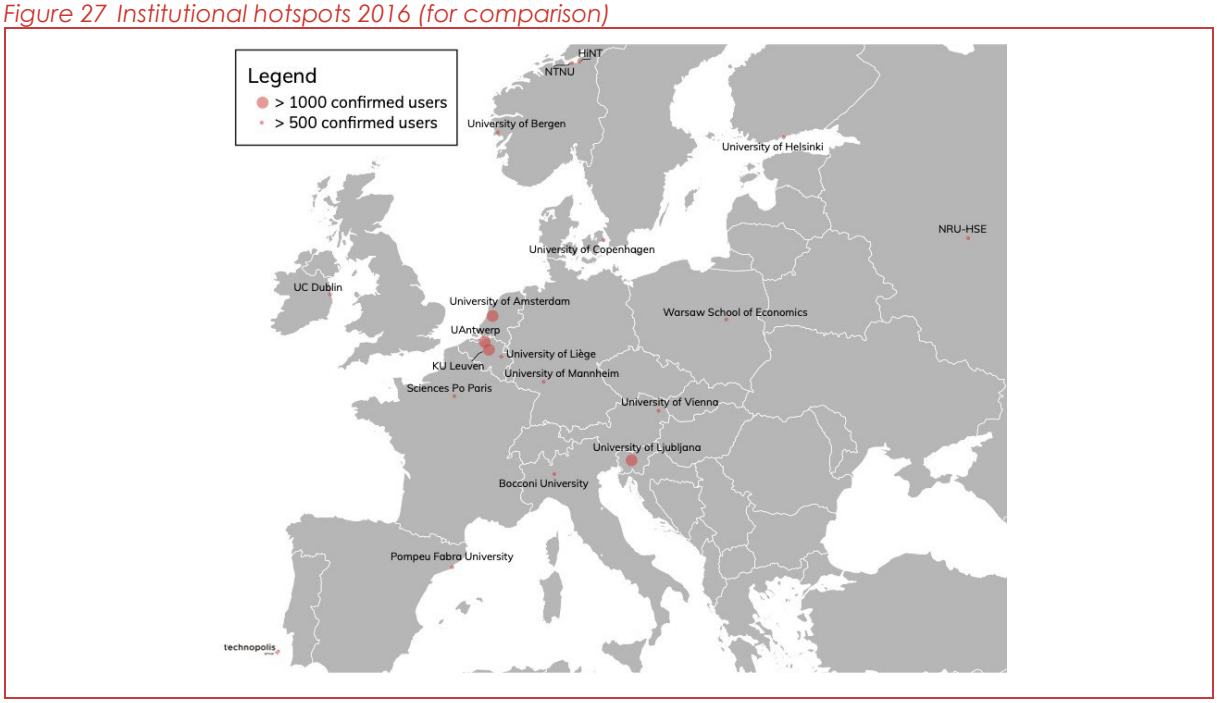
In 2016, there were 18 institutions with more than 500 confirmed users (including four with over 1,000). By the start of 2021, this increased to 42 (including 15 with over 1,000). The map below shows these confirmed institutional hotspots. Many cluster around the Benelux countries, England and western Germany. However, there are at least some such user hotspots in most European regions. We subsequently also provide a map with the 2016 hotspots for comparison.

Figure 26 Institutional hotspots of confirmed users 2021



Based on freeform entries by ESS users, may exclude uncommon mis-spellings

Figure 27 Institutional hotspots 2016 (for comparison)



Based on freeform entries by ESS users, may exclude uncommon mis-spellings

Given the overall growth trend of the ESS user base, this rise in the number of institutional hotspots is unsurprising. Some institutions only just fell short of the 500-mark in 2016 and have passed it since. Indeed, there have been few 'new entries' in the list of top-30 institutions by confirmed user-count (see below). The user base at several of the current top-30 has grown by between 60% and 100% compared with 2016 – roughly in line with the overall growth of the ESS user-base.

However, there are also several institutions where the number of ESS users has increased at a rate far and above what would be expected. These include most notably the universities of Aarhus, Zurich, Carlos III Madrid, Duisburg-Essen, Cologne, Utrecht, Warwick, Brussels (free) and Leiden. There is therefore a clear sense that new hotspots of ESS rapidly emerge, whilst established hotspots continue to grow at steady rates. Where feasible, we will consider the reasons or 'stories' behind these rapidly growing hotspots in our individual country reports.

Table 10 Institutional hotspots – growth over time

2021 rank (/30)	Country	Institution	Confirmed user count	July 2016 Count (rank /30)	Growth
1	BE	University of Antwerp	**4575**	2744 (1)	67%
2	SI	University of Ljubljana	**2612**	1853 (2)	41%
3	NO	University of Bergen	**2272**	942 (5)	141%
4	BE	K.U. Leuven	**2050**	1242 (3)	65%
5	NL	University of Amsterdam	**1979**	1213 (4)	63%
6	NO	NTNU	**1683**	654 (8)	157%
7	RU	NRU HSE	**1592**	582 (10)	174%
8	FR	Sciences Po Paris	**1517**	876 (6)	73%
9	IT	Bocconi University	**1358**	530 (13)	156%
10	PL	Warsaw School of Economics	**1209**	525 (14)	130%
11	AT	University of Vienna	**1186**	644 (9)	84%

2021 rank (/30)	Country	Institution	Confirmed user count	July 2016 Count (rank /30)	Growth
12	DK	Aarhus University	**1183**	388 (22)	205%
13	BE	University of Liège	**1124**	654 (7)	72%
14	EE	Tartu University	**1077**	475 (19)	127%
15	DK	Copenhagen University	**1070**	508 (17)	111%
16	CH	University of Zürich	**962**	19 (new)	4963%
17	ES	Universidad Carlos III De Madrid	**952**	74 (new)	1186%
18	DE	Universität Duisburg-Essen	**948**	291 (28)	226%
19	NL	Radboud Universiteit Nijmegen	**932**	355 (23)	163%
20	DE	Universität Köln	**912**	212 (new)	330%
21	NL	University of Utrecht	**902**	199 (new)	353%
22	GB	LSE	**897**	465 (20)	93%
23	DE	Universität Mannheim	**889**	522 (15)	70%
24	FI	University of Helsinki	**875**	501 (18)	75%
25	ES	Universidad Pompeu Fabra	**870**	531 (12)	64%
26	NO	HINT	**833**	516 (16)	61%
27	IE	University College Dublin	**714**	535 (11)	33%
28	GB	University of Warwick	**686**	155 (new)	343%
29	BE	Vrije Universiteit Brussel	**658**	218 (new)	202%
30	NL	University of Leiden	**652**	162 (new)	302%

5 Non-academic impact

Whilst we can to an extent quantify impacts of the ESS in the academic and teaching domains, neither our 2016/17 impact study, nor our preparation and research for the present study could identify a meaningful way of quantifying the non-academic impacts of a research infrastructure such as the ESS.

An exception to this is the use of the ESS in social media, where it is possible to use indicators and give a sense of scale. We cover this facet of non-academic impact in the next section of this report.

The most illuminating approach is, as before, to showcase specific examples of non-academic impact. Our country-level research yielded many examples of non-academic impacts of many different types and across different domains. These are noted in our country reports submitted alongside this main report. We present below a selection of impact 'highlights' from non-academic domains. The totality of all examples we present across our country reports is of course non-exhaustive – it presents the full extent of the examples we were able to identify in the 20 countries studies in-depth for this report, based on desk research and our programme of 77 interviews.

No two impact stories are fully 'the same', and so any attempt to produce a typology risks excluding certain cases or impact types, or may fit some impacts better than others. However, based on the examples we found, we note the following common general types of non-academic ESS impacts:

- General intelligence and insight for NGOs or government ministries, agencies or advisory bodies
- Agenda setting: ESS data highlight a particular problem or challenge, triggering various types of policy action
- Influence on public debate or highlighting certain issues to the general public through presentation of ESS data or ESS-based findings in the news media. This may include highlighting widely held misconceptions that the public may have on certain issues
- Monitoring: using ESS data as indicators to track certain aspects of societal progress, e.g. to help assess whether certain policies are achieving the desired outcomes. This may also include adopting aspects of the ESS methodology or ESS questions into other surveys run for such monitoring processes, as described earlier in this report in the context of academic impacts

Some of the examples below may fit into more than one of the above categories, but there broadly appear to be the most common forms of non-academic impact of the ESS.

Table 11 Selection of non-academic impact examples

Country	Brief description of impact
Czech Republic	The ESS data has served as a resource for drafting the National Report on Life Quality and Its Sustainability, under the project "System of long-term priorities of sustainable development in government administration". The report is based on an analysis of selected ESS indicators and assesses developments in the priority areas with a link to strategic and specific objectives of the Czech Republic 2030 strategy. The progress report is submitted to the government every three years.
Hungary	At the start of the COVID-19 pandemic, there was limited information in Hungary concerning the make-up of the elderly population. The core study team used the ESS to examine the social relationships of people aged 65 and over and warned of the potential impact that quarantine rules

Country	Brief description of impact
	would have on this group. This report was widely reported in the Hungarian press, with many calling for more societal support for people in situations of loneliness and isolation.
Norway	Professor Terje Andreas Eikemo, at the Norwegian University of Science and Technology, has built on the use of ESS data in his research. This has led to him co-designing a rotating module on health equity for the ESS. As most health modules in international surveys are epidemiological, the new rotating module will help the ESS to become a key data source for understanding health impacts, increasing the recognition of health aspects on social life. He has also participated in meetings, showcasing his work, with national governments, as well as the Directorate-General for Health at European Commission to show his findings, as well as with the World Health Organisation. He has also participated in a formal debate with the potential future prime minister of Norway where ESS findings on health equity were discussed.
Slovenia	The Ministry of Labour and Social Affairs asked the ESS national coordination team to collaborate and provide data for the formation of "Resolution on Family Policy 2018 – 2028: A Family-Friendly Society, which was adopted in February 2018.
Finland	The ESS survey design and data were used in evaluating the Universal Basic Income (UBI) trial in Finland, among the largest such trials in the world to date. The module on social trust from round 9 was filled by the sample and a control group to compare with the data collected among the ESS sample in 2018. Despite inconclusive results regarding the impact on employment (the original intent), the sample group scored higher in social trust than those receiving standard unemployment welfare, thus contributing to the international debate over UBI.
Estonia	ESS data is used by journalists and during 2016–2021 this resulted in 71 publications in newspapers and news websites with recent publications examining topics such as ageing, social exclusion and climate change. The government sector also takes advantage of ESS data, most recently in supporting the development and funding of social services for at-home-care for adults.
Lithuania	The Lithuanian Strategy for Demography, Migration and Integration Policy 2018–2030 references ESS data to support strengthening Lithuanian NGOs and community organisations in order to foster stronger communities. The Lithuanian NC is engaged in communication activities to inform policy makers about the potential of the ESS to inform governance. An event was held in 2019 with council representatives from the Kaunas District Municipality; the NC is preparing an analysis of how ESS data could contribute towards existing Lithuanian strategies, looking for linkages between performance indicators and data collected through ESS.
Latvia	The Latvian government has asked the National Coordinator of ESS in Latvia to carry out an in-depth analysis of social and political trust in Latvia. The project's title is 'Anatomy of Trust – What European Social Survey Data Tell About Trust in Latvia'. The research will feed into the National Development Plan for 2021-2027, which is drawn up by the Cross-Sectional Coordination Center of Latvia, which directly answers to the Prime Minister. The National Development Plan also uses several indicators from the ESS directly to measure components of trust in Latvian society.
Portugal	Structured and repeated contact with media outlets has led to results from the European Social Survey leading to public debate about racism in Portugal. The National Coordinator and her team keep journalists informed when new rounds of ESS data come out and prepare attuned, short analyses accompanied with an interpretation and/or explanation. In the previous round a journalist who covered racism in Portugal collaborated with the NC on presenting the results in an extended article on racist attitudes. This was picked up by several other media outlets and TV programmes.
United Kingdom	As part of ESS Round 8 (2016), it was decided that a module was necessary to assess public attitudes towards climate change and energy. The leader of this module was Dr. Wouter Poortinga from Cardiff University. The data collected from the ESS was used to conduct additional data collection and research through the British Social Survey 35 in 2018. The combination of these two surveys provided evidence that more work is required to better align UK public opinion about climate change with that of the scientific community.
Ireland	The Healthy and Positive Aging Initiative (HaPAI) has used the ESS as the basis for some of its own survey questions to improve policy and services for Irish citizens as they age. The HaPAI will then be used to form an indicator set that can be deployed by the Irish government to establish clear policy goals in the long-term.
Austria	The Chamber of Labour Vienna recently published a report titled, "Gerechtigkeitscheck: Wie fair findet Österreich die Verteilung von Einkommen und Vermögen – Neue Erkenntnisse aus dem

Country	Brief description of impact
	European Social Survey" ('Justice Check: How fair does Austria find the distribution of income and wealth? – New findings from the European Social Survey'). Here, ESS data were of particular relevance in that they not only assess income inequality, but also wealth inequality. While the assessment of income inequality is well researched, there has been little scientific research on the acceptance of wealth inequality in Austria. In addition, several research groups have emerged that make heavy use of the ESS. The focus of these groups primarily lies on matters surrounding social welfare, perception of policies and the state of Austrian Democracy.
Switzerland	The Military Academy uses ESS data for its annual report on safety, wherein light is being shed on attitudes towards Swiss foreign, security and defence policy. In this report, it was found that Swiss citizens feel safe, exhibit high levels of trust in authorities and are in favour of continued economic sovereignty. In a similar vein, the Service for Combating Racism, as part of the Federal Department of Home Affairs, has repeatedly made use of the ESS, while also the Swiss Federal Statistical Office has used the ESS on multiple occasions for numerous publications and analyses.
France	In 2020, the French government agency National Institute of Statistics and Economic Studies (INSEE) and the Wellbeing Observatory prepared a report on wellbeing in France, using ESS data. This is in the context of ongoing work carried out by France Stratégie (think tank of the French Prime Minister) in the area of personal happiness and wellbeing.
Sweden	Evidence of the amount and quality of democratic participation in Sweden was used from the ESS Round 8 for a strategic inquiry of the state of Swedish democracy commissioned by the Swedish government and published in 2018.
Germany	The ESS was used for eight governmental position papers, studies or drafts between 2017 to 2021. These papers cover a broad range of topics, including variables on immigration, wellbeing, trust in political systems or perceptions of climate change, for instance. Another piece of evidence can be found in the *Institute of the German Economy's* work, which makes regular use of the ESS. For instance, the institute used ESS data for analyses in the context of subjective assessments of unemployment and found that the extent of unemployment is significantly overestimated in all observed European countries. In a similar manner, in the Annual Report of the German Expert Council on Integration and Migration, the ESS is consulted for aspects such as voting behaviour of immigrated citizens or political activism and involvement, to name a few. The Expert Council also used the ESS for its report on *Political Participation and Civil Engagement of Immigrants in Germany*.

6 Findings from the social media analysis

In this chapter, we present the results of our social media analysis. First, we analysed the traffic and activity on the ESS LinkedIn and Twitter accounts ('owned' content) and engagement with the Twitter activity. In the next step, we performed an analysis of the third-party mentions of the ESS on social media ('earned' content) using Meltwater. We cover the main findings of these two elements in respective sub-sections below and include further findings in Appendix B.3.

6.1 Analysis of owned social media: the ESS Twitter account

The ESS has its own official Twitter account (@ESS_Survey handle). Twitter analytics allowed for the analysis of the period of 01/11/2020 –10/03/2021. Over this period, a total of 264 tweets were posted, two tweets per day on average. All tweets were organic (i.e. posted by the account owner, as opposed to sponsored advertisement).

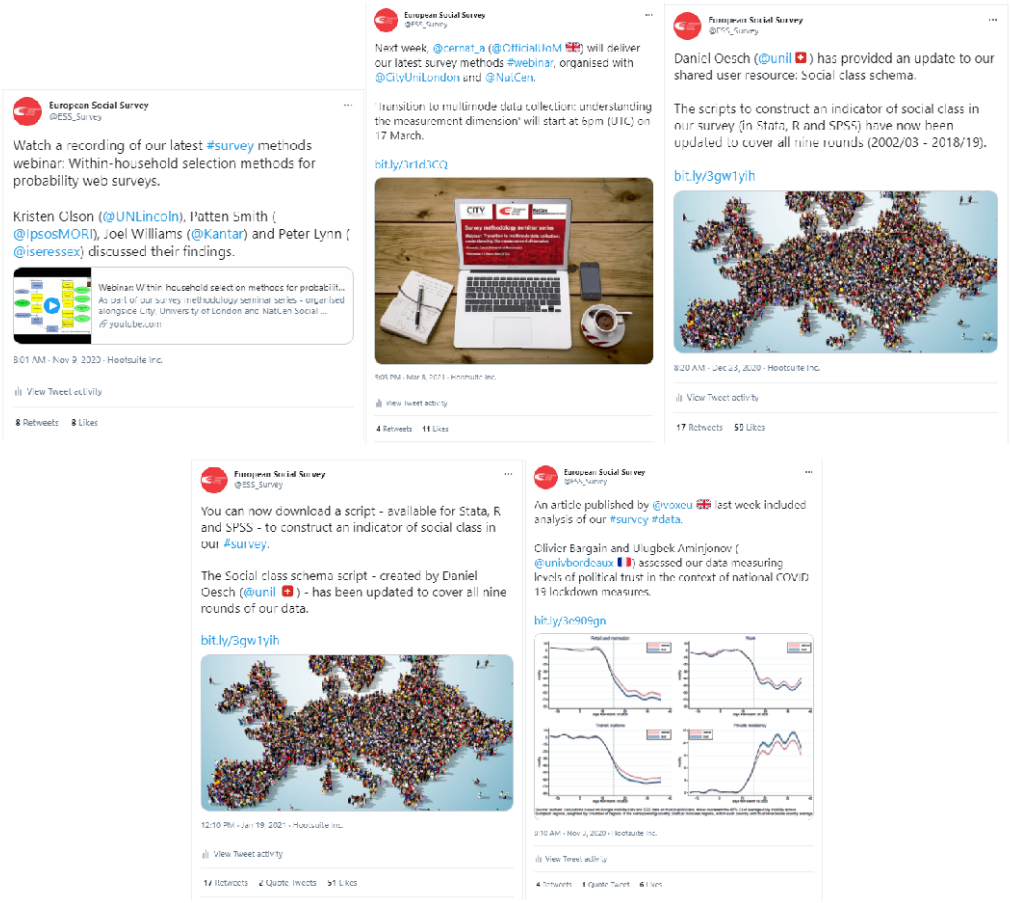
The engagement rate is a standard Twitter metric for the measurement of social media performance. It is calculated as the number of engagements divided by impressions, where engagements are the total number of times a user interacted with a tweet (i.e. clicks anywhere on the tweet, including retweets, replies, follows, likes, links, cards, hashtags, embedded media, username, profile photo, or tweet expansion), and impressions are the number of times a Twitter user is shown a tweet in timeline or search results.

The average engagement rate of the official ESS Twitter account over the 01/11/2020 – 10/03/2021 period was 1.02% and the median was 0.81%, which means that 10.2 ESS Twitter followers out of 1,000 engaged with an ESS tweet on average. Overall, this is a very good performance (a Twitter engagement rate between 0.33% and 1% is generally considered to be high). There were 94 tweets with an engagement rate higher than 1%.

Below we present snapshots of the five tweets with the highest engagement rate over the analysed period. The first two tweets contain an invitation to participate / watch a webinar, the two other tweets contain a link to download a Stata, R and SPSS script for further work with the ESS data, and the fifth ESS tweet with which the Twitter users engaged most contains information on a published article where ESS data was used, accompanied by infographics.

This indicates that the posts which either invite users to interact (e.g. via webinar), or provide additional visual content (e.g. charts / infographics) tend to resonate better with Twitter audiences than tweets containing plain text.

Figure 28 Top 5 ESS Twitter posts with the highest engagement rate (01/11/2020 - 10/03/2021)



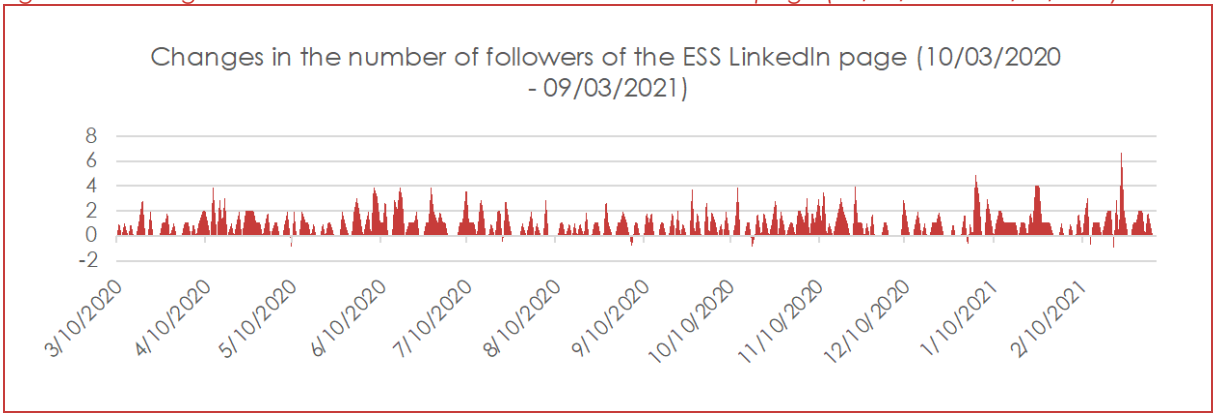
Source: Twitter analytics; analysis by Technopolis.

6.2 Analysis of the owned social media: the ESS LinkedIn page

As of 11/03/2021, the ESS LinkedIn page[35] had 1,014 followers. The number of followers has been growing steadily in the period of March 2020 – March 2021 (there were only several days in the analysed period where the number of followers dropped by one).

[35] Available online at: https://www.linkedin.com/company/european-social-survey.

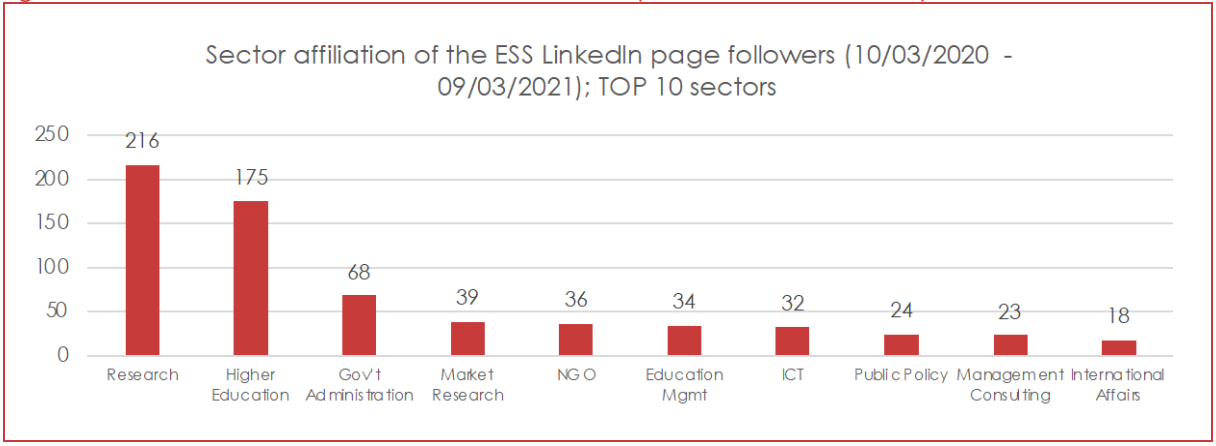
Figure 29 Changes in the number of followers of the ESS LinkedIn page (10/03/2020 - 09/03/2021)



Source: LinkedIn analytics; analysis by Technopolis.

When looking at the sector affiliation of ESS LinkedIn page followers, the two sectors with the highest numbers of followers are research and higher education, which aligns well with the objectives of the ESS.

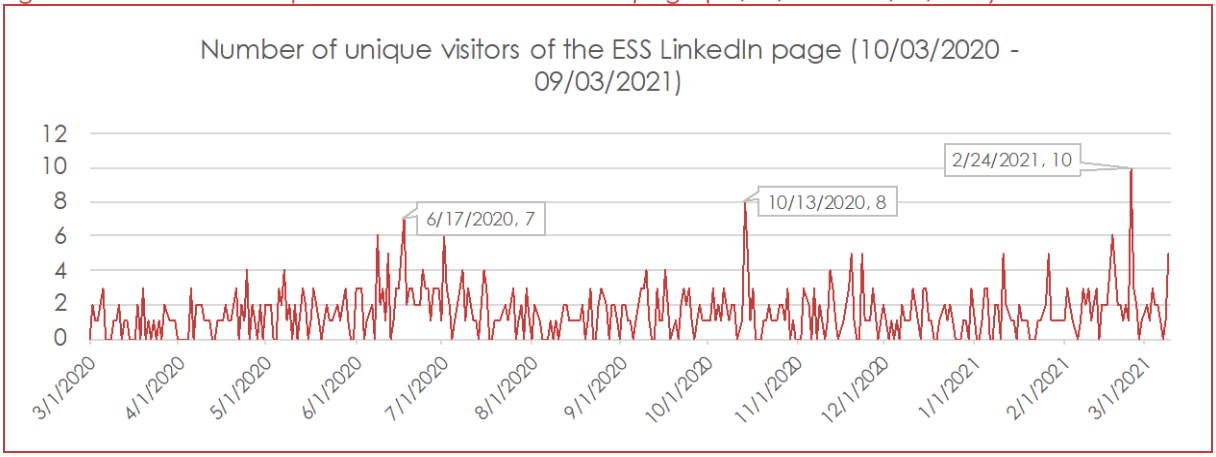
Figure 30 Sector affiliation of the ESS LinkedIn followers (10/03/2020 - 09/03/2021); TOP 10 sectors



Source: LinkedIn analytics; analysis by Technopolis.

In the period between 10/03/2020 and 09/03/2021, the ESS LinkedIn page attracted in total 557 unique visitors (this means that repeated visits by the same person are not counted). This makes an average of 1.49 unique visitor per day. Figure 31 Number of unique visitors of the ESS LinkedIn page (10/03/2020 - 09/03/2021) provides a histogram of the unique visits over the analysed period. Several "peaks" could be identified: 17/06/2020, 13/10/2020 and 24/02/2021.

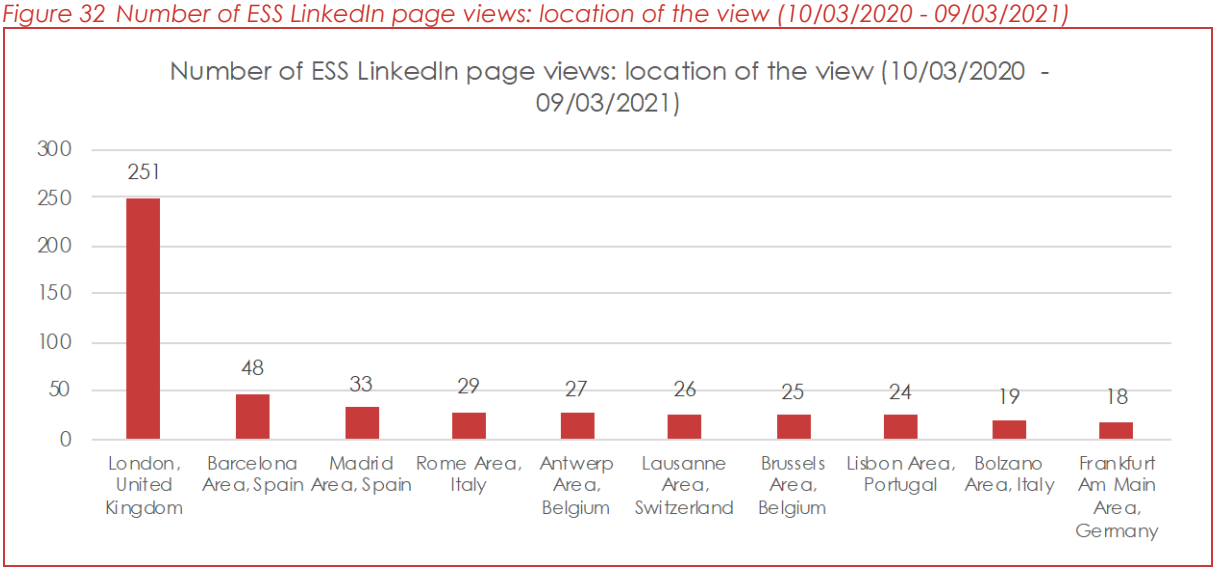
Figure 31 Number of unique visitors of the ESS LinkedIn page (10/03/2020 - 09/03/2021)



Source: LinkedIn analytics; analysis by Technopolis.

London is the location of the highest numbers of the ESS LinkedIn page views (251 visits over the analysed period). This could be explained by the location of the ESS ERIC HQ. Barcelona and Madrid come second (48) and third (33), respectively. Overall, there were 1,082 page views over the period 10/03/2020 – 09/03/2021, which means approximately 3 page views per day.

Figure 32 Number of ESS LinkedIn page views: location of the view (10/03/2020 - 09/03/2021)



Source: LinkedIn analytics; analysis by Technopolis.

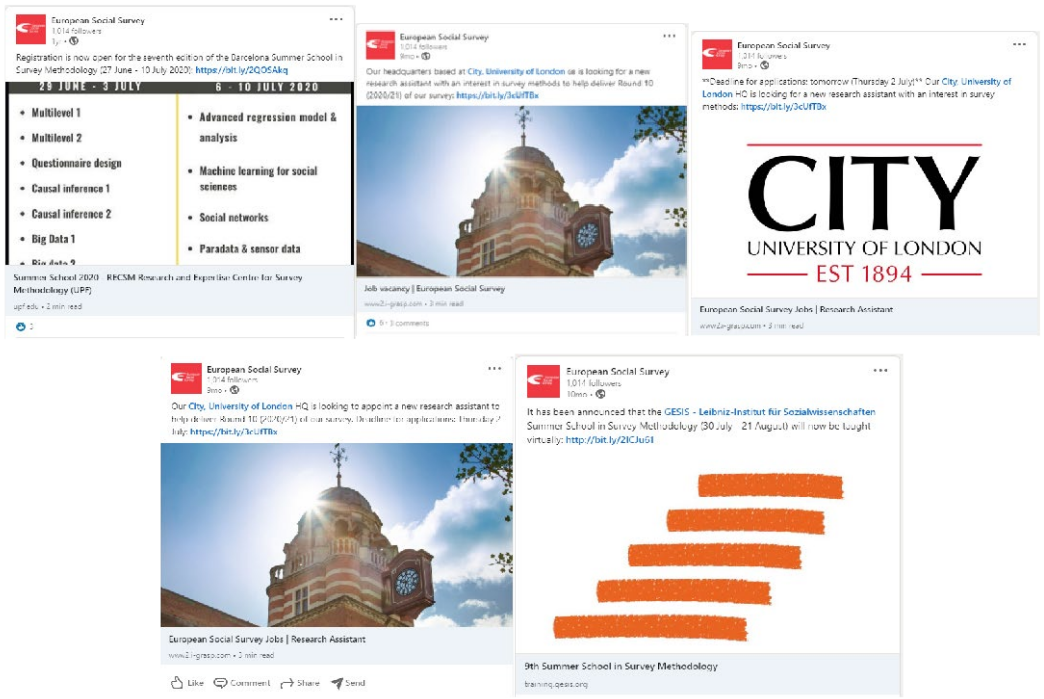
In the period between 10/03/2020 and 09/03/2021, there were in total 500 posts uploaded on the ESS LinkedIn website. All posts were organic (i.e. not part of sponsored advertisement).

The average click-through rate (CTR)[36] was 2.28%. When only those posts which had a non-zero CTR are considered, then the average CTR was 3.02%. This is on a par with a generally accepted LinkedIn benchmark for organic posts of 3%.

[36] The CTR is the ratio of the number of clicks compared to the number of views of a post. It is one of the standard indicators used for measuring performance of social media.

There were two posts with a CTR higher than 10% and 61 posts with a CTR higher than or equal to 5%. Below we provide snapshots of the Top 5 ESS LinkedIn posts, measured by their CTR. All five posts invite readers to take some form of action (either to apply for a job opening within the ESS teams or to apply for a webinar/summer school, as opposed to posts which simply provide information and aims at raising awareness. The latter tend to generate less engagement and lower CTRs from the LinkedIn audience. Furthermore, all posts have some visual element added to the text, which increases the attractiveness of the post for the reader.

Figure 33 Top 5 ESS LinkedIn posts with the highest CTR (10/03/2020 - 09/03/2021)



Source: LinkedIn analytics; analysis by Technopolis.

The table below shows that when compared to similar organisations / research platforms, the ESS LinkedIn page had a good engagement rate (4.9% on average during the analysed period).

Table 12 LinkedIn pages engagement rates of similar organisations (10/03/2020 – 09/03/2021)

LinkedIn Page	**Engagement rate**
World Values Survey Association	7.91%
NatCen Social Research (UK)	5.09%
European Social Survey	**4.9%**
Eurofound	4.23%
GESIS	3.82%
Pew Research Center	3.08%
Office for National Statistics (UK)	2.98%
ESRC: Economic and Social Research Council (UK)	2.95%

Source: LinkedIn analytics; note: engagement rate is calculated as: (Clicks + Likes + Comments + Shares + Follows) / Impressions (number of times the post was displayed to a social media user)

6.3 Analysis of the earned social media echo (Meltwater analysis)

In this section, we provide the results of the analysis of earned social media coverage of ESS. For this analysis, we used the Meltwater software.

This involves an analysis of the social media posts in which ESS was mentioned. Meltwater regularly gathers information from Facebook, Twitter, YouTube, Instagram, various comments, forums, product reviews etc. Our analysis covered this range of sources available on Meltwater. Meltwater provides social media data for a period of the last year, therefore our analysis covered the interval 10/03/2020 – 09/03/2021.

ESS is a pan-European survey. Therefore, we had to make sure that we include translations of the "European Social Survey" in all official languages of the ESS countries. We used these translations as keywords for search on Meltwater.

The data exported from Meltwater allow for both quantitative and qualitative analysis (which could only be conducted on a selected sample of social media posts).

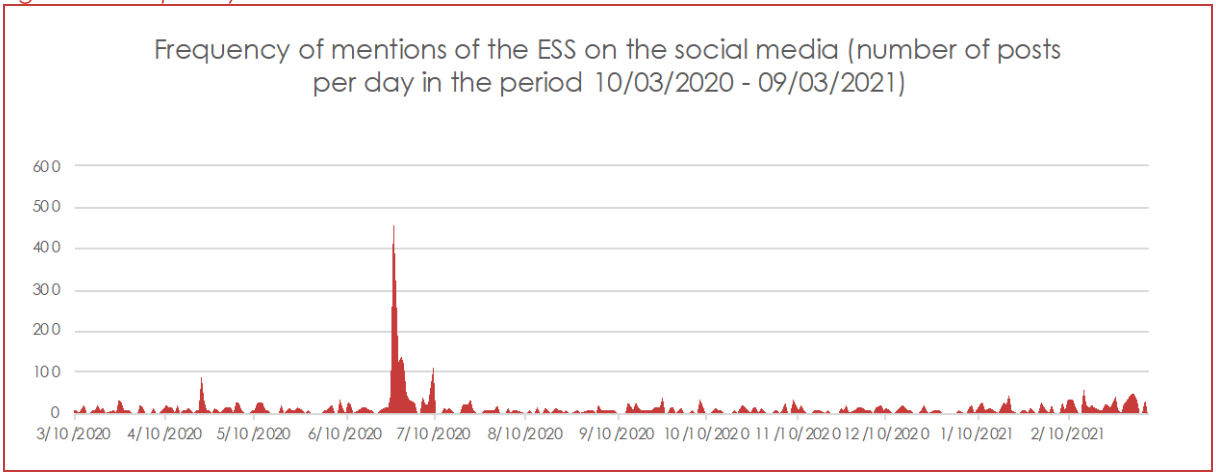
In the period 10/03/2020 – 09/03/2021, there were in total 5,493 social media posts mentioning the European Social Survey (in any of the language versions). Over the 12-month period, this means that, on average, social media users mentioned the European Social Survey 15 times every day.

6.3.1 Trends over time

We performed an analysis of the spread of the number of mentions of the European Social Survey in social media posts over time. Figure 34 shows the results of the analysis for the analysed period. There is a distinct peak on 26/06/2020 and 27/06/2020. On these days, the ESS was mentioned 486 times, 309 times respectively (which represents a very significant increase compared to the average 15 mentions daily).

We then cross-checked with the microdata and the data suggests that the peak at the end of June 2020 relates to the publication of the ESS data about the attitudes of the UK citizens towards the membership of the European Union. These insights have therefore become the most resonating pieces of information during the analysed period in which the ESS was mentioned.

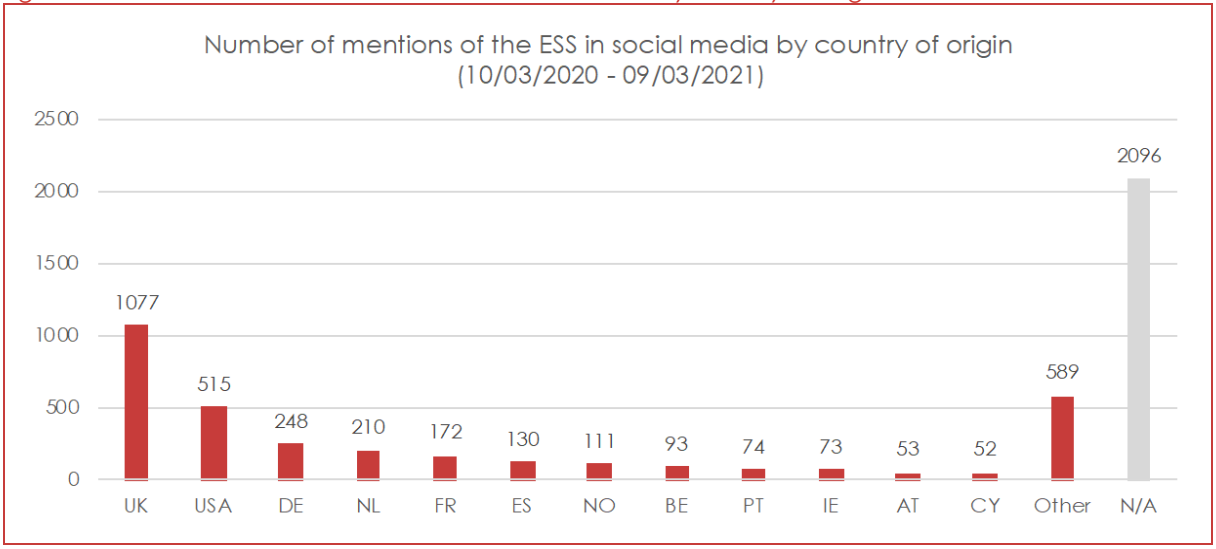
Figure 34 Frequency of mentions of the ESS on the social media



Source: Meltwater; analysis by Technopolis.

The mentions mostly originate in the UK. Over the one-year period, the UK was the origin of 1,077 posts, followed by USA (515) Germany (248), the Netherlands (210) and France (172). The figure shows all countries with at least 50 mentions.

Figure 35 Number of mentions of the ESS in social media by country of origin



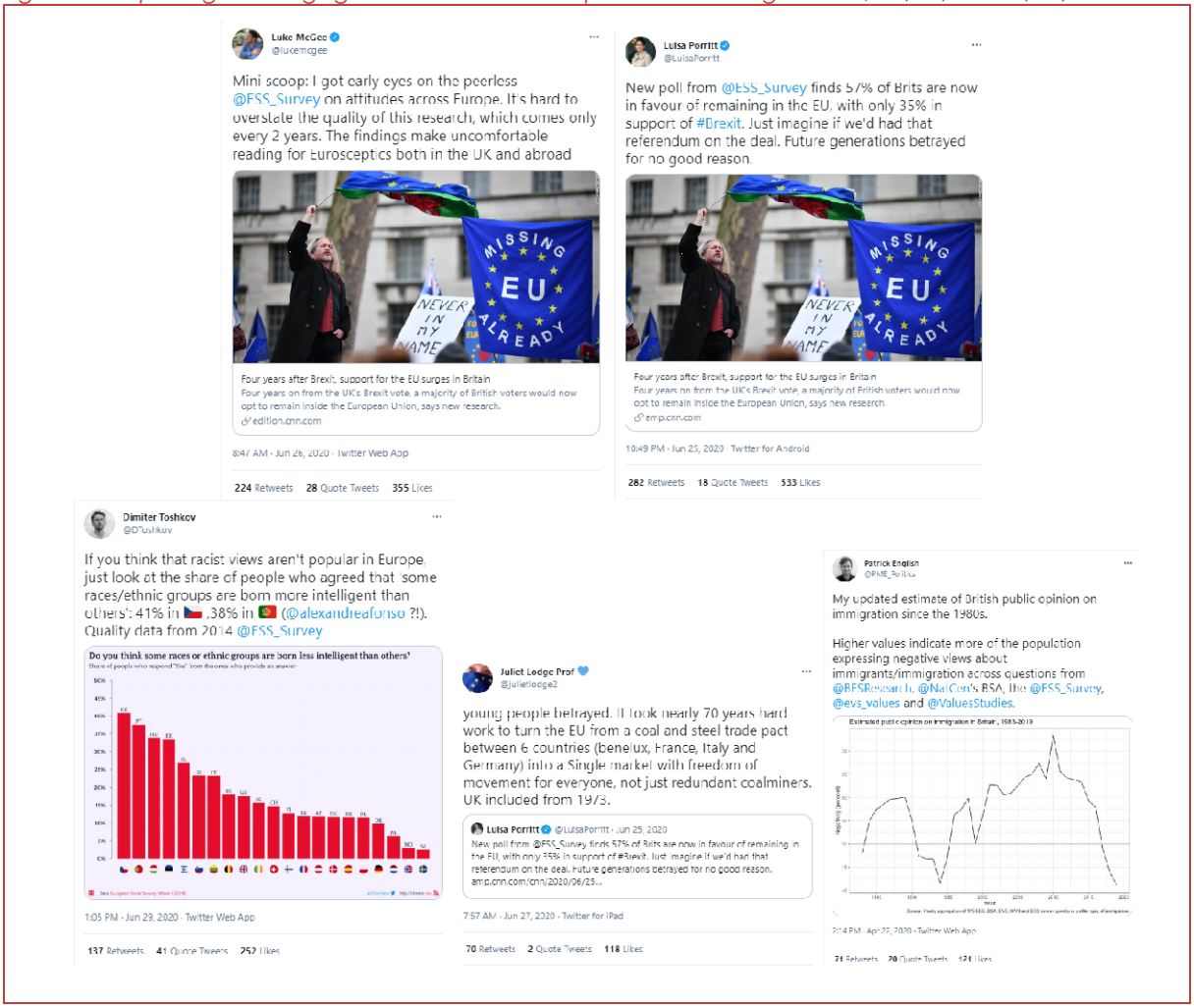
Source: Meltwater; analysis by Technopolis.

6.3.2 *Engagement with the third-party posts*

Engagement is a measure of interaction of a social media post viewer with a given post (re-tweets, likes, shares, comments). Please note that in case of Twitter, Meltwater uses data shared by Twitter which does not always correspond with the number of re-tweets and likes below each post on Twitter. Of the 5,493 social media posts (for the 10/03/2020 – 09/03/2021 period), social media viewers engaged with 852 (15.5%).

Below we present snapshots of the five third-party social media posts with the highest engagement rate over the analysed period. Among the Top 5 posts (all are on Twitter), there are three posts related to the issue of the UK Membership in the EU / Brexit, the issue of racism and immigration. Two of the five posts contain a chart, which makes them more appealing to engage with.

Figure 36 Top-5 highest-engagement social media posts mentioning the ESS, 10/03/20 - 09/03/21

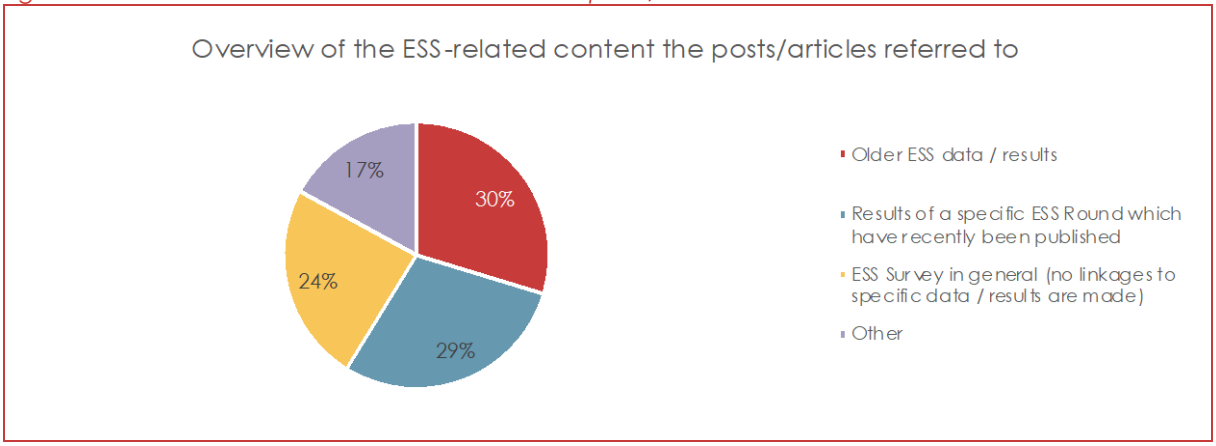


Source: Meltwater; analysis by Technopolis.

6.3.3 *Format of the posts/articles*

The reviewed posts and articles mentioned different ESS-related content. The results somewhat reflect one of the findings in the 2017 ESS Impact Study, namely that the ESS has been impactful both through its data and its methodological rigour. In 24% of the reviewed posts/articles (with high online engagement), no specific ESS data played a role. Instead, it was the ESS approach towards designing, implementing and analysing international surveys, which resonated in these posts/articles. However, the ESS data (with a specific thematic focus) still play the major role (they were the focus in 59% of the reviewed posts/articles). The other category (open-ended answers) included mentions about the upcoming ESS round data collection.

Figure 37 Overview of the ESS-related content the posts/articles referred to



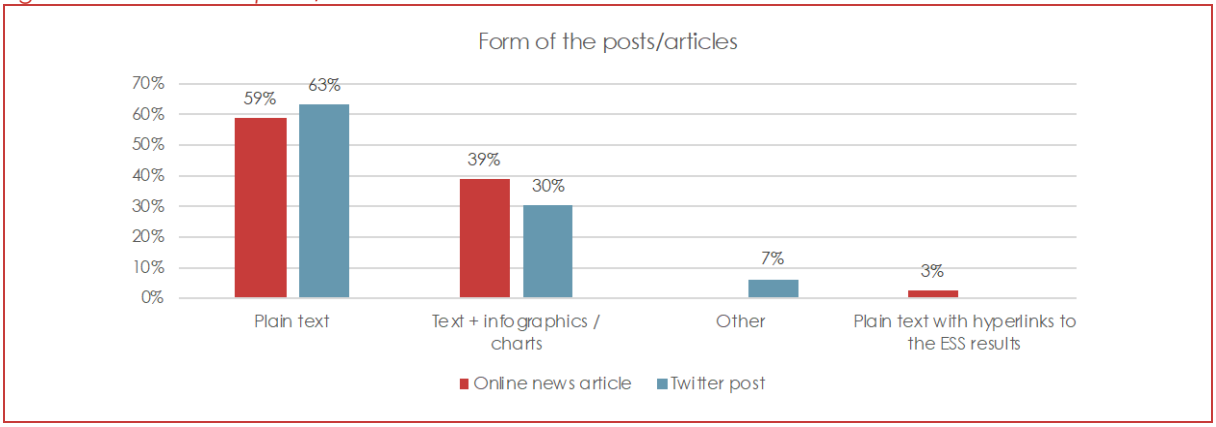
Source: Technopolis; base: 156

Knowing what form resonates more with online audiences can be helpful for understanding where the added value of the ESS lies (as perceived by its audiences). Figure 38shows a breakdown of the results, separated into online news articles and Twitter posts.

In both cases, a majority of the items (with the highest online engagement) had a form of plain text. In 39% of the articles and 30% of the Twitter posts, the text was complemented with a chart or infographic. This is somewhat surprising, because in our previous analyses of the online content, we generally found some form of visual content more resonating with the audience online, rather than just plain text. For example, in our recent analysis of the Eurobarometer online echo (publication forthcoming), we found that the third-party content mentioning Eurobarometer with the strongest online resonance almost always contained a visual element.

One explanation may be that the ESS' online audiences are still very much to be found in academia, where the accuracy of the information often prevails over the simplicity expressed by a chart or infographic.

Figure 38 Form of the posts/articles

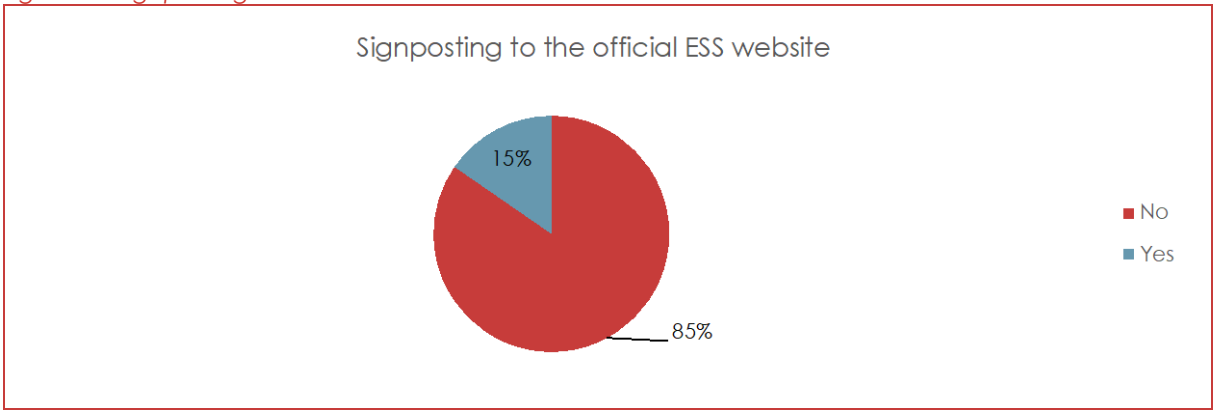


Source: Technopolis; base: 156

6.3.4 *Signposting to the official ESS website*

Fifteen percent of the posts/articles signposted the reader to the official ESS website. This is very important because it allows the readers to find out more, and even engage with the ESS data. At the same time, it is difficult to influence the content of posts / articles produced by third parties. However, we note that ESS' owned tweets in most cases do include a link for the reader to find out more (see section 6.1).

Figure 39 Signposting to the official ESS website



Source: Technopolis; base: 156

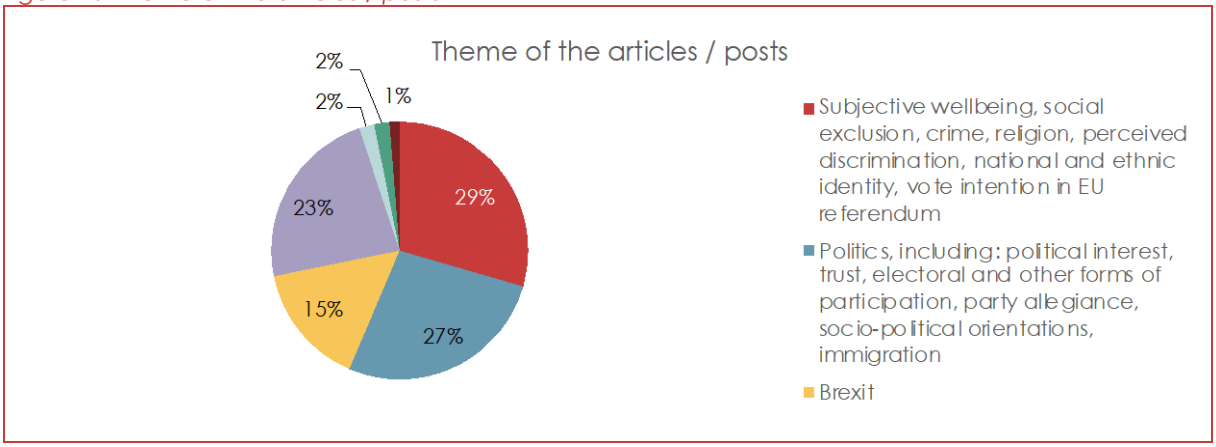
6.3.5 *Themes of the articles / posts*

Figure 40 provides an overview of the policy area focus of the articles / posts. In the highest number of cases (29%), the online content included ESS data about wellbeing, discrimination, crime, religion, ethnicity and related topics. Politics, immigration, elections and trust in politics was the focus in 27% of the articles/posts. Brexit, a single topic, on its own, was the theme of the articles/posts in 15% of the cases. This adds to the finding above on the June 2020 peak in the daily frequency of third-party mentions of the ESS, where Brexit was the dominant topic.

Covid-19 and climate change were often among the other topics, together with a number of other, less frequent themes. To summarise:

- There exist policy areas on which the ESS collects and publishes data that resonate in the online space particularly strongly. The most resonating single topics are Brexit, ethnicity, trust in politics and immigration
- In 2020, Covid-19 and climate change were also among the topics, which points to the fact that the ESS manages to provide data on pressing current issues, and that these are received by the online audiences

Figure 40 Theme of the articles / posts



Source: Technopolis; base: 156

6.3.6 *Mentions of additional impact of the ESS*

We reviewed the selected posts/articles also in order to explore any additional specific impacts that the ESS may have achieved.

In 49 posts/articles, the authors mentioned an academic impact. Our study has a bibliometric component and this form of impact will therefore be explored through that analysis. The wording of 38 posts/articles suggested that other forms of impact might have been achieved. It is challenging to assess the impact based only a short twitter post or a short online news article, because these mentions need following up and further investigation. Nevertheless, some noteworthy examples include:

- The ESS had won the Lijphart/Przeworski/Verba Dataset Award 2020 (more information available here: https://www.cessda.eu/News-Events/News/CESSDA/ESS-receives-dataset-award)
- Former Minister of Science of Montenegro recognises the ESS membership as a beneficial / positive initiative (more information available here: https://www.cdm.me/english/damjanovic-we-have-some-extraordinary-people-in-montenegro/?fbclid=IwAR1hW15XlroolJ2aPsqPG7ThQNJ6RJtRYpDR55OPOxL-lgry3eBa4C6V7JQ)
- Former MEP for London and a London mayor election candidate used the ESS data (more information available here: https://twitter.com/LuisaPorritt/status/1276271276764659712)

7 A note on drivers and barriers to impact

The first ESS impact study in 2016/17 explored in detail the issue of pathways to impact and assessed the drivers and barriers to ESS impact as well as to ESS use more broadly. Those findings have since also been discussed elsewhere,[37] and our research for this study largely found the same drivers and barriers. However, it is worth briefly noting the main drivers and barriers and their implications, especially as there have been some minor changes in a few areas.

Some key drivers of ESS use and impact lie with the nature of the ESS itself: its high (unparalleled in the estimation of many interviewees) methodological standards, alongside the availability of extensive background material are critical, especially for academic purposes. The system of core and rotating modules is likewise widely acknowledged as an important element of the ESS, as it ensures both reliably recurring information on core topics, alongside the ability to remain relevant as new topics of interest emerge.

The longevity of the ESS is increasingly acknowledged as an important aspect too: having been in existence for almost twenty years, there is increasing scope to conduct analysis over time. This relates to the overall existence of the ESS, but also to the fact that many countries have participated consistently over all rounds to date. As we explain below, there is also a hazard contained here whenever a country is unable to participate in an ESS round, at which point use of the data is hampered.

Related to this point, in recent years the ESS has been included in several countries' research infrastructure roadmaps or similar strategy documents. In many cases, this is seen as an encouraging sign that there is a degree of commitment from the funders to ensure long-term participation in the ESS. In turn, this gives users from across different domains confidence to use the ESS in their endeavours, as they can be reasonably sure that no data gaps are likely to occur for their country any time soon.

The notion of 'impact systems' was evident throughout our research: each participating country has different contexts, including in academic, non-academic and teaching domains. This begins with different levels of resource for the NC teams, and extends to the presence or absence of other 'competing' surveys, different levels of quantitative social science traditions, different levels of data-driven journalism, and indeed of evidenced-based policymaking. The latter may be subject to temporary political trends, or to more general and long-established practices in the formal political sphere.

Contexts therefore differ and so the levels and types of ESS-impacts should not be directly compared among different countries. However, NC teams and other high-profile ESS users can have a lot of agency to generate greater ESS use and impact, particularly when they are given at least some resources.

A particularly strongly recurring theme across most countries we covered in this study has been the use of outreach events. These may include ESS 'roadshows' and visiting seminars by the NC at institutions across a country, or one-off conferences presenting ESS-based work. Some NC teams have also been able to establish their own social media presence and/or created their own promotional materials showcasing ESS data highlights, sometimes in the national language. Often, these activities are targeted at academic audiences (who may in turn use

[37] Kolarz P (2019) 'From measuring impacts to mapping impact systems: Lessons for the impact assessment of research infrastructures from a study on the European Social Survey ERIC'. FTEVAL Journal for Research and Technology Policy Evaluation, Issue 47 May 2019, pp. 17-22.

the ESS for teaching purposes). However, seminars or short, user-friendly publications have also been directed at the general public or at government agencies and other non-academic actors.

Finally, we note as an important driver of impact that the type of institution or research group chosen for ESS national coordination matters. In many countries, the ESS has moved to large and prestigious national institutions that were already strongly associated with social survey expertise. In some cases, these may even be specific organisations that coordinate several national and international social surveys in one place (e.g. CORS is Sweden, FORS in Switzerland, GESIS in Germany). A move of ESS national coordination into such organisations is often associated with a strong and sustained increase in annual new user numbers.

NC teams with personnel and resources for outreach and dissemination events are also critical. NC teams with existing connections to many other academic institutions, and indeed to politics and the news media, are important conditions that may influence expansion of ESS use and impact. We note that some interviewees also felt that the presence of ESSHQ in the UK and of the ESS data warehouse at NSD in Norway add prestige and 'visibility' of the ESS in those countries.

Whilst the overall user base of the ESS has grown considerably in recent years, there are also several notable 'spikes' in particular countries, leading to rates of growth above and beyond the global average. In most cases, at least some of the factors noted above appear to have been at work.

At the same time, there continue to be some barriers to ESS use and impact. The following were especially evident from our research:

- Non-participation in an ESS round can considerably hamper ESS use and impact in a country: missing a round decreases the relevance of the data (at least temporarily), it removes the ability to do analyses over time, and it may reduce ESS users' confidence and ability to rely on the presence of regular ESS data in the future. However, we note that it is possible to create virtuous cycles here: if the ESS is used for many long-term monitoring activities – including policy monitoring or more general regular intelligence provision to various parts of government – then the case against non-participation becomes considerably stronger
- For non-academic impacts, many consultees for this study continue to see problems with the complexity and presentation of ESS data. Whilst academics generally find the ESS user interface to be of high quality and useful for their endeavours, non-academic audiences tend to find the data portal and raw data bewildering. 'Translation' into simple data snippets or clear descriptive and well-visualised findings are needed. When these are missing, there is effectively a 'barrier to entry'
- Somewhat counter-acting the drivers of impact noted above, several countries have in recent years either seen the budget available for the ESS reduced, or costs (e.g. for data collection) rising. This means that in some cases, the available budget for outreach activities gets squeezed. Increases in the cost of running the ESS have in some cases also been noted to heighten uncertainty about continued investment by funders. As explained above, this lack of planning-certainty may in turn hamper the use of the ESS for long-term national monitoring activities
- Depending on context, the ESS may have plenty of 'competition'. Specifically, most countries have large and well-known firms conducting regular opinions polls, which can be targeted specifically around the issues of the day and feed more easily into the news

media. Likewise, national statistics offices may have more comprehensive and granular data (including at regional and municipal levels), which may be preferable in many academic, non-academic and teaching contexts. This competition is stronger in some countries than in others, but a degree of realism is necessary here, in that the ESS is simply not always the best tool for every task. At the same time, we identified several cases where the ESS had a strong media echo – usually in cases where relatively recent ESS data happened to be relevant to an especially topical issue and was presented in a user-friendly way. More broadly, demonstrating the added value of the ESS alongside opinion polls on one hand and national statistics on the other may be an important future task to augment the role of the ESS for non-academic audiences

On a final note, our research also found instances where impacts occur, but where visible links of the impact back to the ESS are lost. Our social media analysis revealed that the ESS is sometime either poorly acknowledged (e.g. third parties showing ESS-based findings without citing the ESS social media handles) or not acknowledged at all.

Allowing online users, readers and viewers to link the ESS to existing institutions and/or specific people associated with the ESS could potentially increase the online voice of the ESS and its partners and, indirectly, contribute to a higher degree of ESS data use. The analysis showed that this does not happen too often.

Direct hyperlinks to the ESS website and databases included in the social media posts and online news articles could potentially contribute to increasing ESS user numbers. The content posted by the ESS' own Twitter account includes hyperlinks, which is good practice. It is difficult to influence third-party authors to do the same, however, in some future cases, they could potentially be approached and asked to modify their post/article so that it contains the links to the ESS.

Beyond social media, a particularly illustrative example of attribution to the ESS being lost comes from a case in Portugal detailed in the original 2016/17 impact study. The ESS highlighted extremely low levels of public trust in the Portuguese judiciary, which in turn led to substantial reform of the curriculum for Portuguese judges and state prosecutors. It was one of the clearest, most direct and large-scale non-academic impacts found in our previous study. Follow-up work revealed that the changes to the curriculum have remained in place, and that the curriculum has since evolved further, strengthening the elements intended to lead to higher levels of trust in the judiciary. However, due to the retirement of the various people involved in the original curriculum reform and the presence of new directors, the knowledge that ESS data were the source of these reforms has already all but disappeared. In other words, the impact itself remains, but the link to the ESS is no longer known in the institution.

We mention this anecdote as a final point mainly to illustrate that there are quite possibly many other such instances where ESS data contributed to agenda setting and catalysed change, but non-acknowledgement and the advancement of time mean that these links may be forgotten.

Appendix A Methodological details

A.1 Approach to country-level reporting

In the original ESS impact study (2016/17), we produced country profiles of around 4-5 pages in length for 17 core ESS countries: Austria, Belgium, Czechia, Estonia, France, Germany, Hungary, Ireland, Lithuania, Netherlands, Norway, Poland, Portugal, Slovenia, Sweden, Switzerland, and the United Kingdom.

The profiles showcased trends on user numbers, institutional hotspots and bibliometric indicators, outlined the benefits of ESS in each country (as these differ considerably among countries) and noted specific examples of academic, non-academic and teaching impact. Research for these profiles was conducted in late 2016, so they are five years out of date.

We have therefore produce fully updated country profiles for each of these 17 countries, as well as for three further countries not covered by the previous study: Bulgaria, Finland and Latvia. The resulting country reports have been submitted alongside this main report. Their style and format closely reflect that of the original country profiles. Each one draws on:

- The user data update
- The bibliometric analysis
- The social media analysis where relevant country-specific findings are yielded
- Additional desk research to identify any new impacts or ESS-related activities
- An interview with the current NC and an average of 3 additional interviews or extended e-mail exchanges with key individuals identified as important sources of information on impacts that have materialised since 2016 (interviewees were identified via desk research or consultation with the NC

The original ESS impact study also included a set of 36 impact case study examples. Many of these featured a singular instance of ESS impact and are effectively 'closed cases'. But in some cases, the impact 'story' outlined in 2016/17 may since have progressed, with new developments to report. We therefore followed up on those impact cases where significant subsequent activity may have occurred and report any developments in brief as part of the country profiles.

A.2 Consultees for this study & interview approach

Table 13 List of consultees for this study

Country	Interviewee	Organisation	Position	Interview date	Interviewer
Austria	Johannes Schweighofer	Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz	Head of Department	07.09.2021	Katharina Warta
Austria	Laurenz Ennser-Jedenastik	Universität Wien	Professor of Social Policies and Political Parties	21.07.2021	Dominik Beckers
Austria	Markus Wagner	Universität Wien	Professor of Quantitative Party and Election Research	14.07.2021	Dominik Beckers

Country	Interviewee	Organisation	Position	Interview date	Interviewer
Austria	Matthias Reiter-Pázmándy	Bundesministerium für Bildung, Wissenschaft und Forschung	Deputy Head of the Department for Social Sciences and Humanities	19.07.2021	Dominik Beckers
Austria	Peter Grand	Institute for Advanced Studies	Senior Researcher European Governance, Public Finance and Labour Markets ESS NC	24.06.2021	Dominik Beckers
Belgium	Dimitri Mortelmans	University of Antwerp	Full professor of sociology	15/09/2021	Erwin Karsten
Belgium	Pierre Baudewyns	Université Catholique de Louvain	National coordinator for Wallonia	06/08/2021	Erwin Karsten
Bulgaria	Elka Todorova	Institute of Sociology at the Bulgarian Academy of Sciences	Chairman of the Consortium "ESS for Bulgaria".	06/09/2021	Erwin Karsten
Bulgaria	Todorka Dimova Kineva	University of National and World Economy	Chief scientific assistant	E-mail exchange only, Sept 2021	Erwin Karsten
Bulgaria	Venelin Boshnakov	University of National and World Economy	National coordinator ESS Bulgaria	21/07/2021	Erwin Karsten
Czech Republic	Klara Plecita	Sociologicky ustav Akademie ved CR / Institute of Sociology of the Academy of Sciences of the Czech Republic	National Coordinator; Head of Department of Value Orientations in Society and Senior Fellow	23/06/2021	Adam Krcal
Czech Republic	Marek Vysinka, Nada Vaverova	Ministry of Education, Youth and Sports, Department of Research and Development	Head of Unit, Policy officer	20/07/2021	Adam Krcal
Czech Republic	Pavlina Mildnerova and Adela Hrubesova	Czech Statistical Office	Officers	12/08/2021	Adam Krcal
Czech Republic	Professor Dana Hamplova	Sociologicky ustav Akademie ved CR / Institute of Sociology of the Academy of Sciences of the Czech Republic	ESS SAB member	23/07/2021	Adam Krcal
Czech Republic	Radka Hanzlova	Sociologicky ustav Akademie ved CR / Institute of Sociology of the Academy of Sciences of the Czech Republic	Researcher	15/07/2021	Adam Krcal
Estonia	Ave Roots	University of Tartu	Lecturer in Sociology, Programme Director at Tartu University, Faculty of Social Sciences, Institute of Social Studies	02/09/2021	Reda Nausedaite

Country	Interviewee	Organisation	Position	Interview date	Interviewer
Estonia	Mare Ainsaar	University of Tartu	National Coordinator; Associate Professor in Sociology and Social Policy at University of Tartu, Faculty of Social Sciences, Institute of Social Studies	12/07/2021	Reda Nausedaite
Estonia	Marju Himma	University of Tartu	Research Fellow of Journalism Studies	17/09/2021	Reda Nausedaite
Finland	Professor Heikki Ervasti	University of Turku	Professor of Sociology & NC of ESS Finland	08/07/2021	Laura Sutinen
Finland	Professor Olavi Kangas	University of Turku	Professor of Practice	12/07/2021	Laura Sutinen
France	Basudeb Chaudhuri	Ministry of Higher Education and Research of France	Policy officer	25/08/2021	Adam Krcal
France	Nicolas Sauger	SciencesPo. Paris	National Coordinator; Associate Professor	02/08/2021	Adam Krcal
France	Oscar Smallenbroek	SciencesPo. Paris	Post-doctoral researcher	27/08/2021	Adam Krcal
Germany	Achim Goerres	Universität Duisburg-Essen	Professor of Empirical Political Science	E-mail exchange only, Sept 2021	Dominik Beckers
Germany	Alex Wittlif	Sachverständigenrat für Integration und Migration	Researcher on the Expert Council	13.09.2021	Dominik Beckers
Germany	Anika Rasner	Bundeskanzleramt	Expert Council	E-mail exchange only, Sept 2021	Dominik Beckers
Germany	Christian Czymara	Goethe University Frankfurt	Lecturer in Quantitative Methods for Social Research	29.06.2021	Dominik Beckers
Germany	Eldad Davidov	University of Cologne	Lecturer in Quantitative Methods and Empirical Social Research	05.07.2021	Dominik Beckers
Germany	Judith Niehues	Institut der deutschen Wirtschaft	Leader Research Group Microdata and Development of Methods	E-mail exchange only, Sept 2021	Dominik Beckers
Germany	Jürgen Bauknecht	Hochschule Koblenz	Professor of Quantitative Empirical Social Sciences	E-mail exchange only, Jul 2021	Dominik Beckers
Germany	Noémie Le Donné	OECD	Research and Policy Analyst	E-mail exchange only, Sept 2021	Dominik Beckers
Germany	Oshrat Hochman	Leibniz-Institut für Sozialwissenschaften (GESIS)	Leader Social Surveys, ESS NC	10/06/2021	Dominik Beckers

Country	Interviewee	Organisation	Position	Interview date	Interviewer
Germany	Silke Schneider	Leibniz-Institut für Sozialwissenschaften (GESIS)	Deputy Leader Questionnaire Design and Evaluation	08/07/2021	Dominik Beckers
Hungary	Bence Ságvári	Central European University	Senior Research Fellow, NC ESS	22/07/2021	Aaron Vinnik
Hungary	Gábor Hajdu	Hungarian Academy of Sciences	Senior Research Fellow	E-mail exchange only, Sept 2021	Aaron Vinnik
Hungary	Vera Messing	Central European University	Research Fellow, NC ESS	22/07/2021	Aaron Vinnik
Ireland	Brendan Halpin	University of Limerick	Senior Lecturer	20/09/2021	Aaron Vinnik
Ireland	Joe Whelan	Trinity College Dublin	Assistant Professor School of Social WOrk and Social Policy	20/09/2021	Aaron Vinnik
Ireland	Michael Collins	University College Dublin	Assistant Professor of Social Policy, NC ESS	27/07/2021	Aaron Vinnik
Ireland	Seán Ó Riain	National University of Ireland Maynooth	Professor of Sociology	21/09/2021	Aaron Vinnik
Ireland	Siobhan O'Sullivan	University of Cork	Lecturer in Social Policy	21/09/2021	Aaron Vinnik
Latvia	Jurijs Ņikišins	University of Latvia	Professor of Sociology, National Coordinator	22.06.2021	Anneloes de Ruiter
Latvia	Mara Simane	Cross-Sectional Coordination Center of the Republic of Latvia	Advisor	Email exchange only September 2021	Anneloes de Ruiter
Lithuania	Apolonijus Žilys	Vytautas Magnus University	National coordinator; lecturer at the Faculty of Social Sciences	23/09/2021	Reda Nausedaite
Lithuania	Aurelija Stelmokienė	Vytautas Magnus University	Dean at the Faculty of Social Sciences	13/07/2021	Reda Nausedaite
Lithuania	Gabija Jarašiūnaitė-Fedosejeva	Vytautas Magnus University	Lecturer at the Faculty of Social Sciences	28/09/2021	Reda Nausedaite
Netherlands	Aat Liefbroer	Netherlands Interdisciplinary Demographic Institute	National coordinator ESS	27/05/2021	Erwin Karsten
Netherlands	Dimiter Toshkov	University of Leiden	Associate professor	13/09/2021	Erwin Karsten
Netherlands	Gerbert Kraaykamp	Radboud University Nijmegen	Professor and director of social research (also previous ESS NC)	E-mail exchange only, Sept 2021	Erwin Karsten
Netherlands	Herman van de Werfhorst	University of Amsterdam	Professor of sociology	E-mail exchange only, Sept 2021	Erwin Karsten

Country	Interviewee	Organisation	Position	Interview date	Interviewer
Norway	Knut Kalgraff Skjåk	Norwegian Centre for Research Data	Norwegian Centre for Research Data ESS director	09/08/2021	Julie D'hont
Norway	Siri Thorensen	Norwegian Centre for Violence and Traumatic Stress Studies	Senior Professor	04/08/2021	Julie D'hont
Norway	Sveinung Arnesen	University of Bergen	ESS National Coordinator	25/06/2021	Julie D'hont
Norway	Teerje Andreas Eikemoo	Norwegian University of Science and Technology	Professor of sociology as well as Leader of CHAIN: Centre for Global Health	10/082021	Julie D'hont
Norway	Vigdis Namtvedt Kvalhelm	Norwegian Centre for Research Data	Director of the Norwegian Centre for Research Data	09/08/2021	Julie D'hont
Poland	Franciszek Sztabiński	Institute of Philosophy and Sociology, Polish Academy of Sciences	Professor, National Coordinator	E-mail exchange only, Sept-October 2021	Reda Nausedaite
Portugal	Alice Ramos	Instituto Universitário de Lisboa	Professor, National Coordinator	30.06.2021	Anneloes de Ruiter
Portugal	Joana Gorajo Henriques	Público, national newspaper	Journalist	13.8.2021	Anneloes de Ruiter
Portugal	Pedro Malgohaès	Instituto Universitário de Lisboa	Professor in Social Sciences	29.06.2021	Anneloes de Ruiter
Portugal	Rosário Mauritti	Instituto Universitário de Lisboa	Director Soft Skills Lab, Professor in Social Sciences	14.9.2021	Anneloes de Ruiter
Slovenia	Brina Malnar	Centre for Public Opinion and Mass Communication, Faculty of Social Sciences, University of Ljubljana	Director of the Centre Public Opinion Research and Mass Communication	15/07/2021	Julie D'hont
Slovenia	Mitja Hafner-Fink	Centre for Public Opinion and Mass Communication, Faculty of Social Sciences, University of Ljubljana	Chair of Social Informatics and Methodology	15/09/2021	Julie D'hont
Slovenia	Samo Uhan	Centre for Public Opinion and Mass Communication, Faculty of Social Sciences, University of Ljubljana	Chair of Theoretical Sociology	24/08/2021	Julie D'hont
Slovenia	Slavko Kurdija	Centre for Public Opinion and Mass Communication, Faculty of Social	Slovenian ESS Nation Coordinator	15/ 07/2021	Julie D'hont

Country	Interviewee	Organisation	Position	Interview date	Interviewer
		Sciences, University of Ljubljana			
Slovenia	Valerija Korošec	Institute of Macroeconomics and Development	Undersecretary	15/09/2021	Julie D'hont
Sweden	Philip Fors	Umeå University	Research Coordinator	12/07/2021	Laura Sutinen
Sweden	Professor Mikael Hjerm	Umeå University	Professor of Sociology & NC of ESS Sweden	13/07/2021	Laura Sutinen
Switzerland	Isabelle Stadelmann	Unviersity of Bern	Professor of Comparative Political Sciences	05.08.2021	Dominik Beckers
Switzerland	Line Rennwald	University of Geneva	Postdoctoral Researcher	18.06.2021	Dominik Beckers
Switzerland	Michèle Ernst-Strähli	Swiss Centre of Expertise in the Social Sciences	Head of Group International Surveys	04.06.2021	Dominik Beckers
Switzerland	Tibor Szvircsev Tresch & Thomas Ferst	Military Academy at the ETH Zürich	Head of Military Sociology; Researcher	E-mail exchange only, Sept 2021	Dominik Beckers
United Kingdom	Alum Humphrey	NatCen	Director of Household Surveys, NC ESS	16/07/2021	Aaron Vinnik
United Kingdom	David Buil-Gil	University of Exeter	Lecturer in Quantitative Criminology	E-mail exchange only, Sept 2021	Aaron Vinnik
United Kingdom	Hannah Swift	University of Kent	Senior Lecturer in Social and Organisational Psychology	15/09/2021	Aaron Vinnik
United Kingdom	Nitzam Peri-Rotem	University of Exeter	Lecturer in Socialogy and Q-Step Programme	E-mail exchange only, Sept 2021	Aaron Vinnik
United Kingdom	Peter Lynn	University of Essex	Professor and Director of Institute for Social and Economic Research, Chair of ESS Sampling and Weighting Panel	13/09/2021	Aaron Vinnik

We did not use a uniform set of interview questions, as there were very different questions to ask, depending on each consultee. We present below the interview guide for country correspondents that was used for this study. However, we not that not all questions were asked to all consultees, and additional bespoke questions, often specific to particular known outputs or impacts may have formed the basis of at least some of the conversations we have had.

Interview template

Interviewee details:

Interviewee name	
Reason for interviewing (ESS NC; academic user, non-academic user; high user-count institution, whatever briefly explains it)	
Country	
Institution	
Position/ job role	
Interviewer	
Interview date (format e.g. 22/04/2021)	

Ethics & preamble:

As this is part of a Horizon 2020 project, research ethics are especially important here. We have discussed this with the client and come to the following conclusion: Normally we assure interviewees that they will not be quoted directly and what they say will only be reported in non-attributable form. In this study we cannot do that: people will be talking about specific impacts and specific countries at least some of the time, so very often it will be possible to link their identities to impacts and national actions that we end up reporting. Therefore, we need to note to every interviewee at the start that their identities will be revealed in our reporting. They can withdraw their participation or any part of their answers at any time (including after the interview) and should only answer as far as they are happy for their views to be reported. Please ensure you communicate this clearly to interviewees at the start of each interview!

Questions

These questions will be good to ask NCs or anyone else you might speak to who has a really involved and detailed view of the ESS in your country. For other ESS users you might speak to who are perhaps not as involved in the running of the ESS, a more crunched-down version will follow below.

1. Who are the **most common organisations / individuals** who have made use of ESS data in your country?
   i) How commonly or widely is it used as a basis for **academic/ research work**
   ii) How commonly or widely is it used as **a teaching resource**?
   iii) How commonly or widely is it used **by non-academics**?

2. What is your **overall opinion** on the ESS data and its impact in your country? *(Note for the interviewer: This is an overall commentary, detailed questions on the impact follow)*

3. In your view, what are the most common **benefits** stemming from the use of ESS data in your country? *(some additional prompts: methodological and capacity benefits, such as improving cross-national survey methods; conceptual benefits, such as improved teaching, improved monitoring of social phenomena; instrumental benefits, such as improved evidence base, improved social science and policy etc.)*

4. To the best of your knowledge, has ESS use led to **any wider social, political, cultural or economic impact** in your country?
   i) **If yes**, could you please elaborate on the areas?

5. Are there any **particular examples of ESS impacts** in your country that you are aware of? *(Note for the interviewer, we are especially interested in non-academic, i.e. policy / practice, impact. However, if the interviewee does not know any, they can give examples of academic impacts)*

6. To the best of your knowledge, are there organisations and/or individuals in your country who track, measure and assess impact of the ESS data?
   i) **If yes**, how are these activities done? By whom? How often?

Section B – Pathways to impact of ESS data

7. *Can you talk about the steps that have been undertaken in [your country] to ensure dissemination, uptake and impact of ESS findings?*
   i) What have been the most important or fruitful activities?

8. Does the NC team (or anyone else) use social media to promote or raise awareness about the ESS and its findings?

9. Are the mechanisms of how users work with ESS data in your country regularly discussed internally within the ESS bodies?
   i) Have you ever engaged in such discussions?

10. Do you know **any examples of good practice** in the way ESS data and information services are used in your country which have proved to be particularly beneficial *(and may hold lessons for other users and intermediaries)*?

Section C – Critical reflection

11. In your view, what are the **strong points** of the ESS, compared for instance to other international social surveys?

12. Do you see any **barriers** to using the ESS and achieving impacts in your country? *(prompts: selection of topics, of countries, the difficulty of accessing and downloading ESS data, the number and quality of at-a-glance reports produced by ESS, etc.)*

13. Do you professionally engage with **any other international research infrastructure**?
    i) If **yes**, could you please describe with which one(s) and the mechanisms and processes there are in place to trace and identify the impact?
    ii) If **no**, would you know of any mechanisms and processes that other international research infrastructures apply to trace and identify the impact?

Section D – Closing questions

14. Do you have any **other comments** relating to the use of ESS and its impact in COUNTRY X?
15. Are there any individuals who you think are **worth contacting** to talk about ESS impacts in COUNTRY X?
16. Finally, we would be interested in hearing any **reflections** you might have on our task: what are your thoughts on conducting impact studies on big research infrastructures like the ESS? Do you think we have been asking the right questions? Are there any questions we should be asking but haven't? Do you see any challenges or problems in our task or ways to address these?

Questions for individuals who have achieved outputs or impacts using the ESS

1. Could you please briefly describe your **role** within the research organisation you represent?

2. Do you have any direct contact with individuals involved in the ESS? *(members of ESS bodies, ESS users etc.)*.

3. Do you follow the development in ESS, such as announcement of new rounds, of new modules etc.?

4. In your view, what are the **most common uses of the ESS**, at your institution, in your country and in general terms?

5. How have you used ESS data? Could you please describe briefly what you did with ESS data and for what purpose(s)?

6. What benefits have occurred for you and your organisation through using the ESS? How has it made your life easier?

7. Who are the **main intended audiences** of your work with ESS?

8. Did you produce any tangible **outputs** of the use of ESS data in general? *(e.g. academic outputs, such as articles in academic journals, books and monographs, working papers, new analytical tools; and teaching outputs, such as new module and/or course, new teaching materials etc; Non-academic outputs, such as briefing papers, consultancy reports, events, policy / strategy documents, newspaper articles.)*

9. Please tell us **what kind of impacts** your work with ESS data has had; we are interested in academic impacts, non-academic impacts (e.g. on policy or practice) as well as on teaching. *[We would like a detailed answer to this question – do push a little for details if possible!]*

10. Reflecting on the impacts of the ESS-based work you have pointed to, what would you say were the key factors that made these impacts possible?

11. Let's talk about **barriers**: Were there any factors that made it harder to achieve these impacts, or are there even impacts you hoped to achieve but couldn't?

12. In your view, what are the **strong points** of ESS? *(prompts: the cost is not covered by users themselves, consistency of data over time, methodological rigor, the ease of accessing and downloading ESS data, etc.)*

13. In your view, what are its **weak points**? *(prompts: selection of topics, of countries, the difficulty of accessing and downloading ESS data, the number and quality of at-a-glance reports produced by ESS, etc.)*

14. Do you professionally engage with any other international social surveys?

    i) If **yes**, could you please describe with which one(s) and how these compare with ESS?

15. Do you have any **other comments** relating to the use of ESS and its impact?
16. Are there any individuals who you think are **worth contacting** to talk about ESS impacts?
17. Finally, we would be interested in hearing any **reflections** you might have on our task: what are your thoughts on conducting impact studies on big research infrastructures like the ESS? Do you think we have been asking the right questions? Are there any questions we should be asking but haven't? Do you see any challenges or problems in our task or ways to address these?

BOLT-ON 1: Representatives of institutions with particularly large numbers of registered ESS users (likely associated with significant teaching impacts)

This module will be added to interviews where the interviewee list indicates that the interviewee's institution has either a high user-count (possibly suggesting big teaching impacts) or publication count (suggesting academic impacts)

"Based on our desk research, the institution you are affiliated with, has particularly large numbers of registered ESS users / of ESS outputs. We would like to ask you a few questions to get more detail about these findings."

1. Are you aware of the fact that your institution has **large numbers of registered ESS users / of ESS outputs**?
2. Do you know the **individual(s) / team(s)** to whom these high levels of ESS use can be attributed?
   i) **If yes**, are you in regular contact with them? *(Note for the interviewer: Please, ask for contact details)*
   ii) **If no**, is there a way to identify these individual(s) / team(s)?
3. In your view, what are the **reasons** for the large numbers of registered ESS users / of ESS outputs?
4. To the best of your knowledge, are ESS data used for **teaching purposes** in your institution?
   i) **If yes**, how is it used? *(prompt: Is it used by the same academics/researchers who are registered ESS users or is there an internal mechanism in place that transfers ESS data to a different team?)*

BOLT-ON 2: Country-specific trends from user data

This module will be added to some interviews – the interviewer needs to assess whether appropriate. Look at the country factsheet detailing our analysis of user-data. If the country of your interviewee occupies any interesting positions in the data (e.g. amongst the highest student-user density; very low overall user numbers; High for faculty users but low for PhD students, etc etc), ask them about it. They will not know the figures, but may be aware of the general trends or be able to explain them.

N.B: for National Coordinators it may be useful to include this module of questions!!

Example on high/low user count:

Finally, I have a couple of observations you might be able to help us with. As part of our impact study we have also analysed ESS user data, by country, user type and so on. This has shown that [country x] has one of the [highest/ lowest] proportions of registered ESS users [overall, or more specific: e.g. student users, NGO users, etc]. We are trying to understand the reasons for this. Might you have any sense why this is the case?

Example of time-series question:

Finally, I have a couple of observations you might be able to help us with. As part of our impact study we have also analysed ESS user data, by country, user type and so on. This has shown that in [country x] there used to be few ESS users, but then in [year 20xx] the number of users went up dramatically. We are trying to understand the reasons for this. Might you have any

A.3 Notes on the user data update

The first step of our study was to conduct a fully updated ESS user data analysis. We sought to replicate as closely as possible the analysis and data presentation from the original ESS ERIC Impact study so that direct comparison and a 'progress update' becomes possible. We obtained the latest available ESS user data from NSD. Are main areas of investigation were:

- Growth trends in ESS user numbers, including by user type
- Insights into ESS use in terms of downloaders and 'active' users, a category created in the original impact study, meaning non-student users who have logged in and downloaded data at least once within a calendar year
- Geographical/institutional analysis, including user number trends by country as well as institutional hotspots

For most of the user data analysis, we have used the month of June as a cut-off mark. As this time marks the end of the academic year in most countries, it represents more of a distinct end-point in annual user-cycles than the end of the calendar year. Further, June was used as the annual cut-off mark in the original impact study, so we continue to do so to ensure the best possible comparison with the original study's findings. In this report, the latest figures used are mostly those for June 2021.

A.4 Methodological notes on the bibliometric analysis

A.4.1 CWTS' publication classification system of science

The CWTS citation database is a bibliometric version of Web of Science (WoS). One of the special features of this database is the publication based classification system of science. This classification is an alternative to the WoS journal classification system, the WoS journal subject categories. The reason to have this publication based classification system is the problems we encounter using the journal classification system for delineating a scientific field or theme. We discern the following as most prominent ones.

Journal scope (including multi-disciplinary journals)

A journal classification system introduces sets of journals to represents a class, in this case a subject category or field. This implies that journals have a similar scope. They do not need to be comparable with regard to volume (number of articles per year) but they should represent a similar specialization. This is not the case, of course. Journals represent a very broad spectrum. There a very specialized journals (e.g., *Scientometrics*) and very general ones (e.g., *Nature* or *Science* but also *British Medical Journal*). The classification scheme can therefore not be very specialized or precise. In WoS a subject category Multi-disciplinary hosts the very general ones so that a bibliometric analysis of, for instance, the *Social Sciences* or *Nanotechnology*, using this classification, will not take papers in Nature into consideration.

Granularity of the WoS subject categories

The WoS journal classification scheme contains 254 elements. As such it is a stable system. In many cases however, it appears that these 254 subject categories are insufficient to be used for proper field analyses. The problem, however, is that the granularity of the system looks somewhat arbitrary. 'Biochemistry & Molecular biology' on the one hand and 'Ornithology' on the other, for instance, represent rather different aggregates of research. This is illustrated by the number of journals in each of them. Where the category 'Biochemistry & Molecular biology' contains almost 500 journals, 'Ornithology' has only 27. We acknowledge that there is no perfect granularity but we argue that in the WoS subject categories the differences are really

too big. A classification based on more objective grounds does not solve this problem but at least is transparent.

Multiple assignment of journals to categories

In journal classifications from multi-disciplinary databases, journals are assigned to more than one category. Journals often have broader scopes than the categories 'allow'. Also here there are large differences between categories. In the example we used before, 'Biochemistry & Molecular biology,' journals are on average assigned to almost 2 categories. This means that (on average) each journal in this category is also assigned to one other category. For the more specialized category of 'Ornithology' the average is 1. This means that in this category all journals are assigned to this one only. If publications in journals with a multiple assignment would always cover the categories at stake, this should not necessarily be a problem. However, mostly it means that such journals contains structurally publications form the different categories. Therefore, publications may be assigned to two categories although they belong to just one of them.

A.4.2 The CWTS publication based classification scheme

An advanced alternative for the Web of Science journal classification has been developed at CWTS. It counters three major issues:

1. Journal scope (including multi-disciplinary journals)
2. Granularity of the WoS subject categories
3. Multiple assignment of journals to categories

The CWTS publication based classification is developed as described in Waltman & Van Eck (2012) . Since the first version there have been yearly updates of the system. The main characteristics of the classification are as follows.

Publication to publication citation clustering

Clusters of publications are created on the basis of citations from one publication to another. Over 30 Million publications are processed. The clusters contain publications from multiple years (2000-2020). Each publication is assigned to one cluster only at each level. A cluster is considered and in many cases validated as representative for disciplines, research areas, fields or sub-fields. For each cluster, we can calculate growth indices pointing at changing research foci over time.

Multi-level clustering

The classification scheme has at present three different levels. The clusters are hierarchically organized. Currently we discern the following levels.

1. A top level of 24 clusters (areas)
2. A second level of 812 clusters (fields)
3. A third level of 4,140 clusters (sub-fields)

Labels

In a 'self-organized' classification scheme like ours, the labeling of clusters is the biggest challenge. As such, our clusters have no name. Still there is sufficient information available for each cluster to characterize them by suggested labels. These suggestions are based on journal categories, journal names, keywords, publication titles and key authors. An impression of our classification scheme is depicted in the VOSviewer map below. In this map the citation relations

between the clusters on the second level are used to position the hundreds of clusters in a two dimensional space. The VOS mapping technique places clusters that have a strong citation traffic in each other vicinity while clusters with a weak relation are distant from each other.

A.4.3 Data and methodology

Data collection

CWTS was supplied with a list of 7526 publications from the ESS bibliography from University of Lubljana. Unfortunately, the dataset contained quite a few duplicate publications, making it difficult to make exact statements of the unique number of publications contained in the dataset. Out of these 7526 publications, we matched 2374 records, resulting in 2026 unique publications.

In addition to these 2026 unique publications matched to WoS, CWTS identified 410 additional publications, looking for the term European Social Survey or its abbreviation. See Table 14 for whether the term was found in the title or the abstract (one publication matched on the acknowledgements). In addition, 12 publications that were included in the previous report, but were not yet included in this publication set were included. In total, this resulted in the 2448 unique publications that are used in the report.

Table 14 Overview of basis for additional publications collected by CWTS

	abstract		
Title	No	Yes	Grand Total
No	1	367	368
Yes	18	24	42
Grand Total	19	391	410

Only articles and reviews published up to and including 2019 were included for calculating citation based indicators. Other types of material, such a editorials, letters or book reviews, are typically not very informative for measuring citation impact. Total output included all document types and years up to 2020.

Bibliometric methodology

All bibliometric indicators are based on a variable citation window until 2020. This means that we take into account citations up to 2020. For example, for a publication that appeared in 2012, we consider the years 2012 up to and including 2020. Self-citations were excluded.

We count publications fractionally based on the number of authors and their affiliations. This means that we divide a publication by the number of authors and allocate a publication for the fraction to which it was authored by authors affiliated to a certain institution. For example, if a publication has five authors, three of whom belong to University of Lubljana, one of whom also has a second affiliation, we count the publication fractionally for 2.5/5 = 0.5. All bibliometric indicators are weighted fractionally.

The bibliometric statistics are normalised based on a detailed publication classification system of CWTS (Waltman & van Eck, 2012). This classification system is constructed algorithmically using state-of-the-art clustering methods (Traag, van Eck & Waltman, 2019), and consists of

about 4000 fields. We normalise by dividing the number of citations by the mean number of citations for publications in the same field and the same year. If a normalised score is higher than 1, it is higher than the world average, while if the normalised score is lower than 1, it is lower than the world average. This provides an indication of the scientific impact of a set of publications. More details on indicators and data is provided In Waltman et al. (2012).

The open access statistics are based on data collected from Unpaywall, following the methodology as outlined by Robinson-Garcia, Costas and Van Leeuwen (2020).

Indicators

P: The number of publications, fractionally counted. The fraction is determined based on the number of authors that are affiliated to an institute. All other indicators are calculated using fractional counting, which means they are weighted by the fractional count of each publication.

N pub: The number of publications, fully counted. This is independent of the number of authors that are affiliated to an institution.

TCS: The total citation score. This represents the weighted total number of citations accumulated within the citation window.

MCS: The mean citation score. This represents the weighted average number of citations accumulated within the citation window. It equals TCS / P.

MNCS: The mean normalised citation score. This represents the weighted average of the normalised citation score. The normalisation is performed using a detailed publication classification system of CWTS, consisting of about 4000 fields. The average MNCS in the entire database is 1. Scores higher than 1 represent a citation impact that is higher than the world average.

MNJS: The mean normalised journal score. This represents the weighted average of the normalised journal score. The normalised journal score for a publication represents the normalised citation score of all other publications in the same journal that are published in the same year and in the same field. The normalisation is performed using a detailed publication classification system of CWTS, consisting of about 4000 fields. The average MNJS in the entire database is 1. Scores higher than 1 represent a journal citation impact that is higher than the world average.

P(top 10%): The number of publications that belong to the top 10% of their field. The field is determined on the basis of a detailed publication classification system of CWTS, consisting of about 4000 fields.

PP(top 10%): The proportion of publications that belong to the top 10% of their field. The field is determined on the basis of a detailed publication classification system of CWTS, consisting of about 4000 fields. It equals P(top 10%) / P. The PP(top 10%) in the entire database is 10%. Scores above 10% represents impact that is higher than the world average.

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A.5 Methodological notes on the social media analysis

The main purpose of our social media analysis was to contribute to the understanding what kind of ESS content tends to resonate well on social media and who the ESS's audiences are.

Our analysis consists of two strands: '**owned'** social media analysis and 'earned' social media analysis. The owned social media analysis involves the collection of data and reporting on social media activity, reach and engagement on owned social media accounts (LinkedIn and Twitter accounts owned by ESS HQ). The analysis will focus on engagement indicators (likes, retweets, replies) on posts.

For the analysis of the '**earned'** social media mentions (online conversation of third-party social media accounts about ESS), we used the Meltwater software. Meltwater provides breakdowns based on geography, time, sentiment, frequency of posting and trending topics. It identifies and analyses social conversations and comments on Twitter, Facebook, YouTube, blogs, reviews and forums. Meltwater generally limits the availability of social media to the past twelve to fifteen months so the timeframe of the analysis is limited to this timeframe.

Appendix B Additional data

B.1 Additional user data

B.1.1 Net annual new users by country

Figure 41 Austria - net yearly increase in registered users on ESS data portal 2004 - 2021

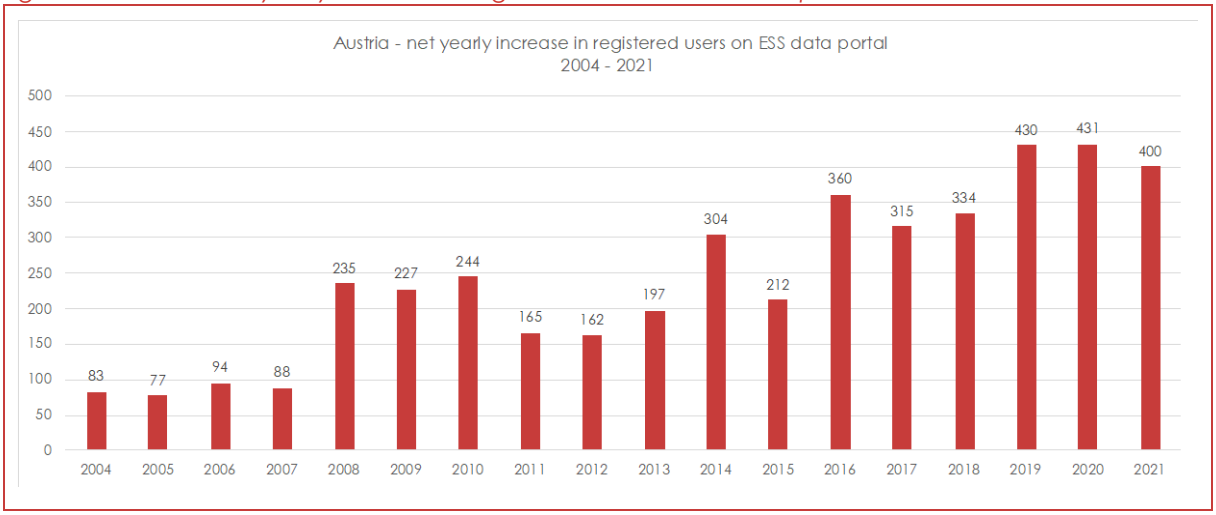


Figure 42 Belgium - net yearly increase in registered users on ESS data portal 2004 – 2021

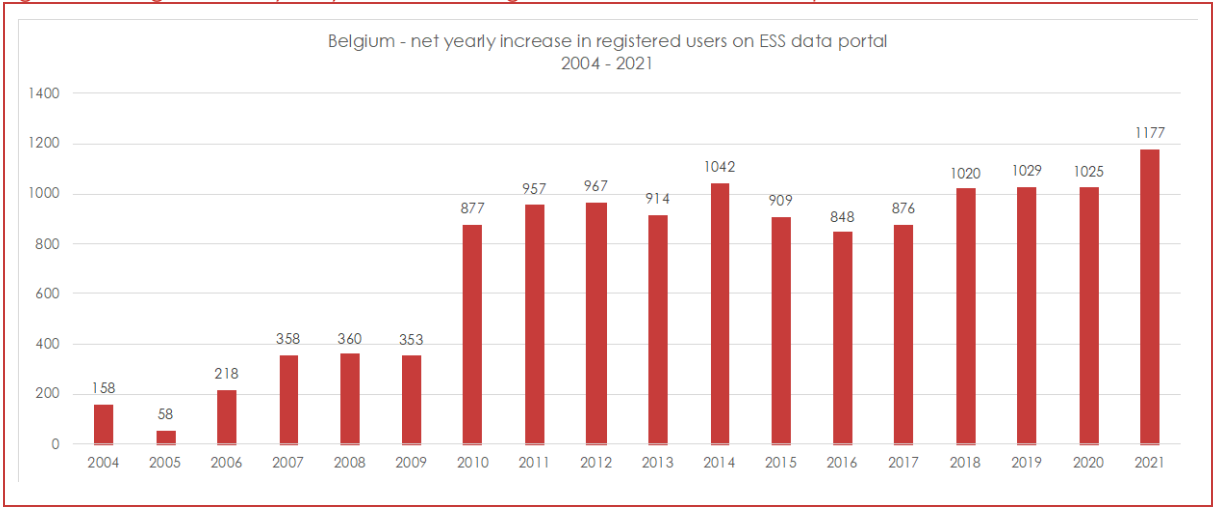


Figure 43 Bulgaria - net yearly increase in registered users on ESS data portal 2004 - 2021

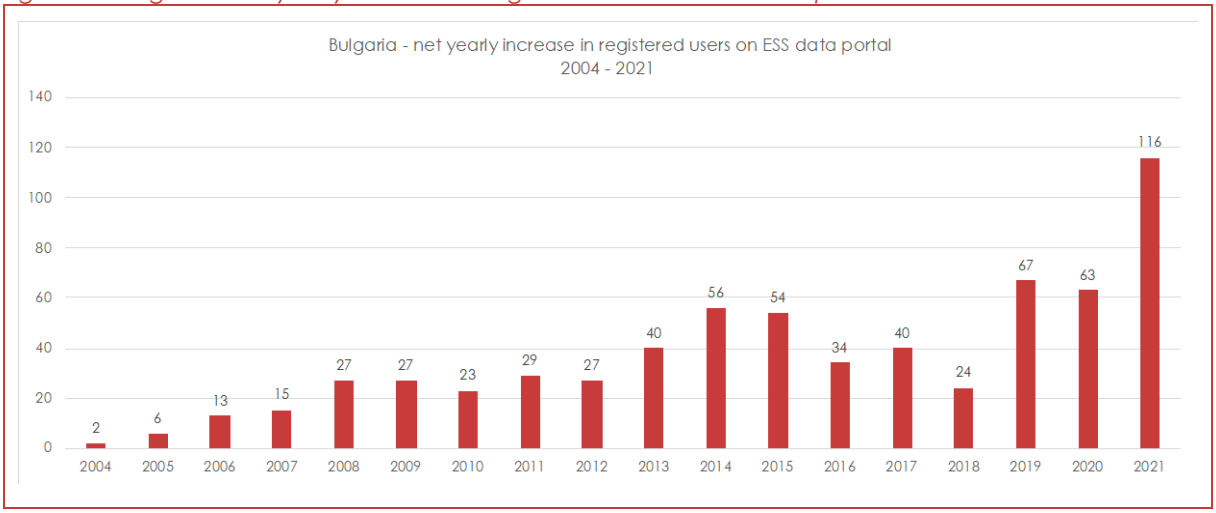


Figure 44 Czech Republic- net yearly increase in registered users on ESS data portal 2004 - 2021

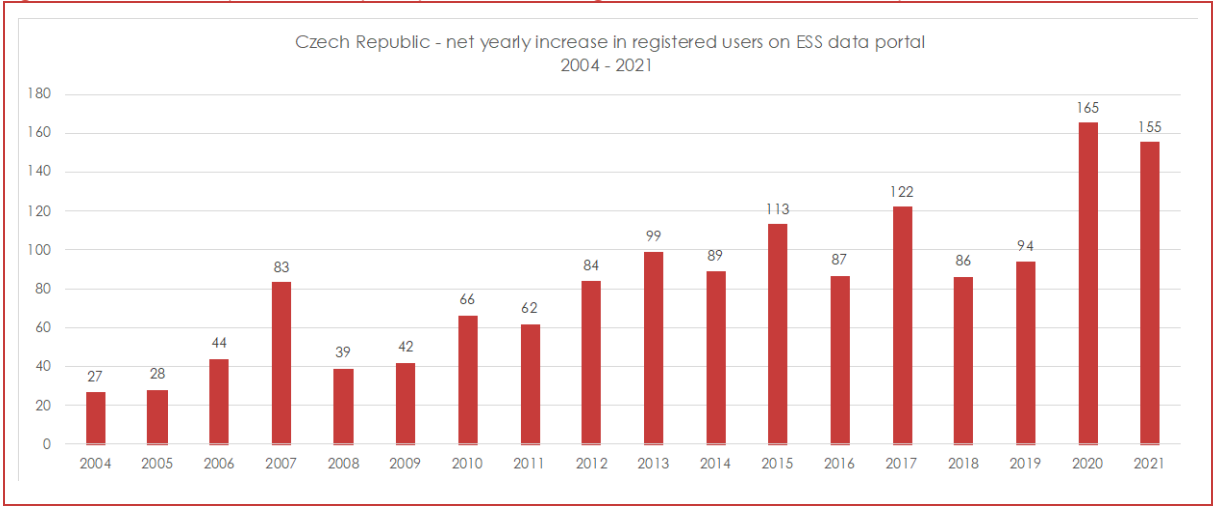


Figure 45 Estonia - net yearly increase in registered users on ESS data portal 2004 - 2021

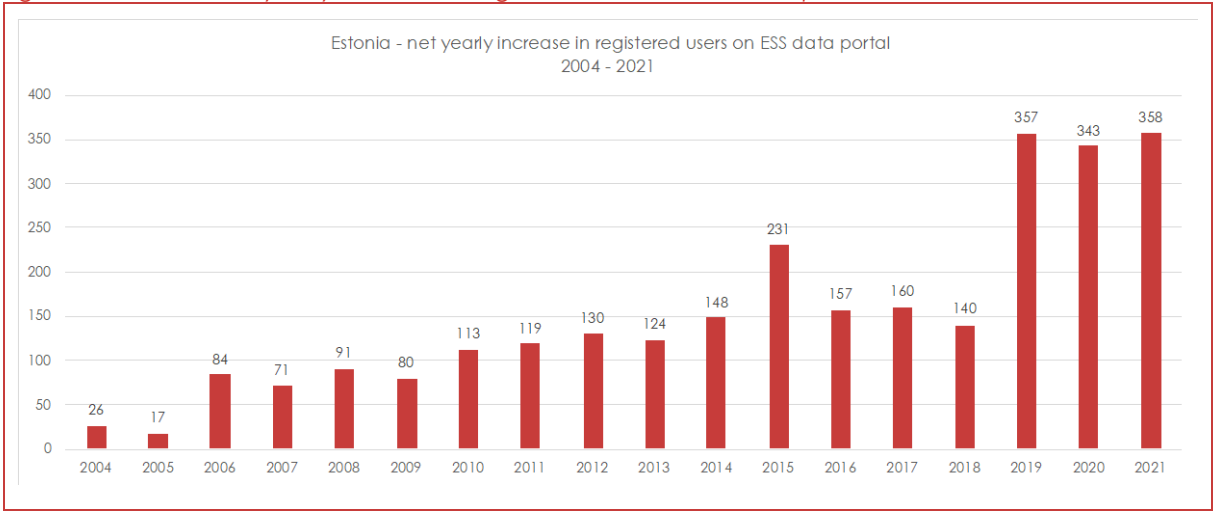


Figure 46 Finland - net yearly increase in registered users on ESS data portal 2004 - 2021

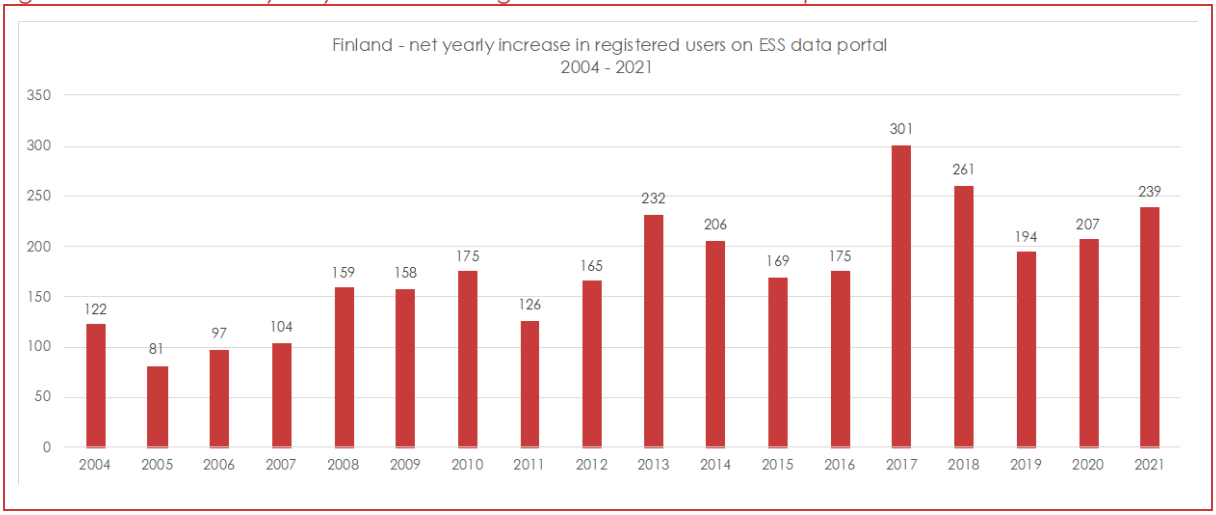


Figure 47 France - net yearly increase in registered users on ESS data portal 2004 - 2021

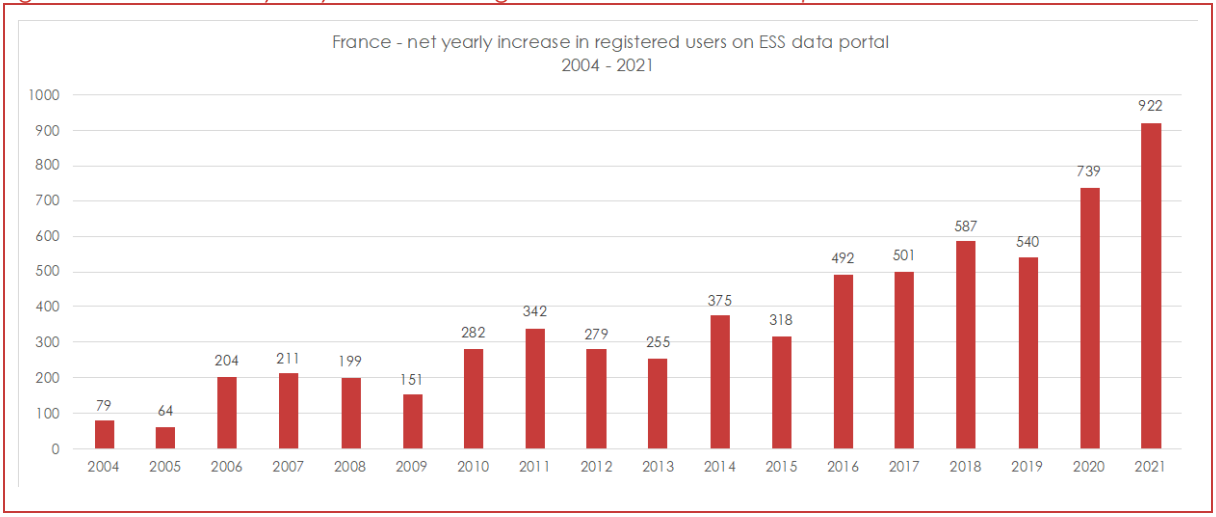


Figure 48 Germany - net yearly increase in registered users on ESS data portal 2004 - 2021

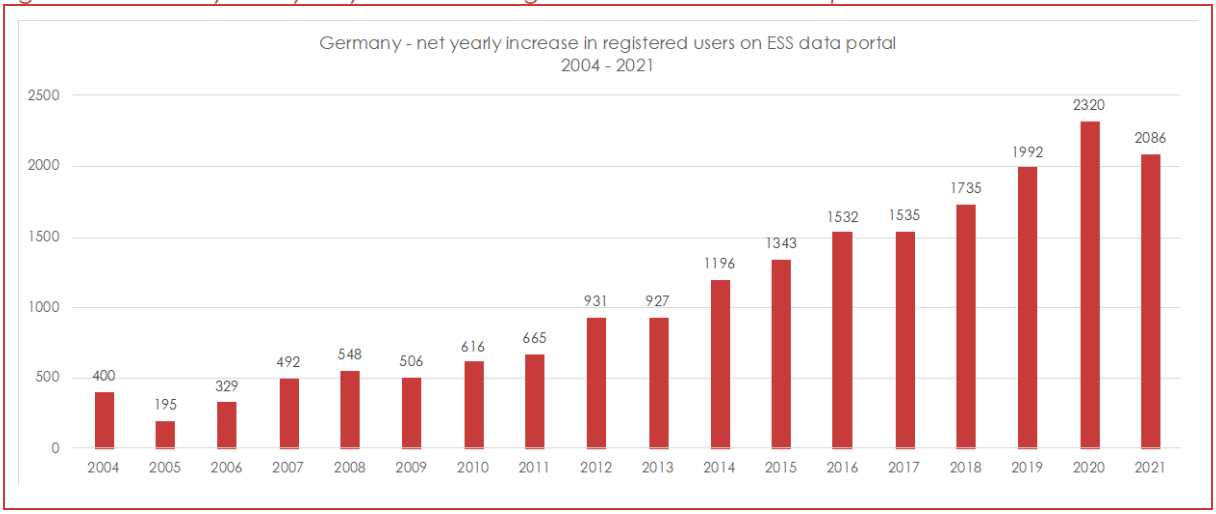


Figure 49 Hungary - net yearly increase in registered users on ESS data portal 2004 - 2021

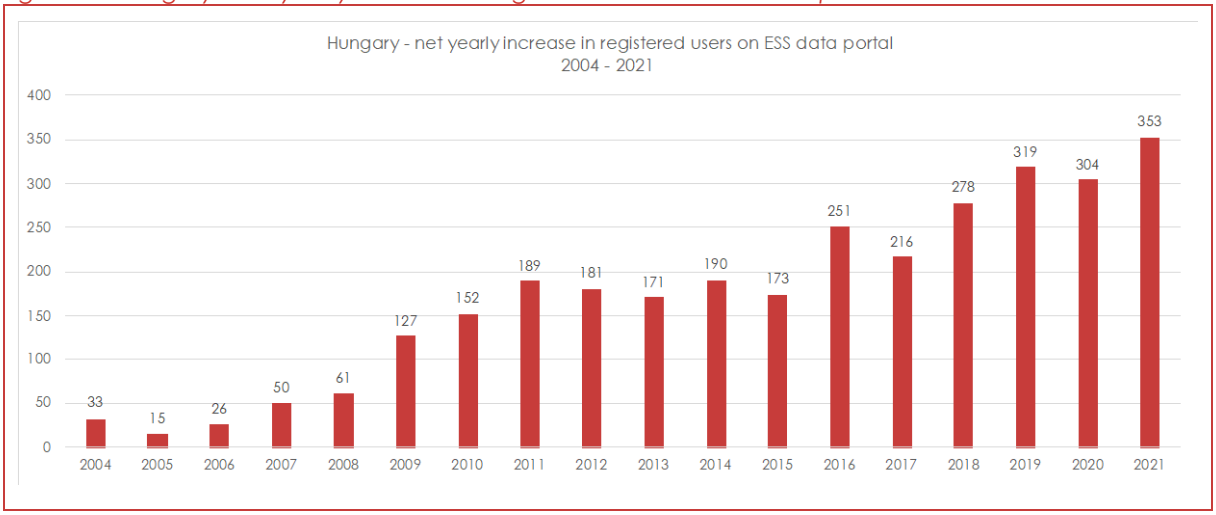


Figure 50 Ireland - net yearly increase in registered users on ESS data portal 2004 - 2021

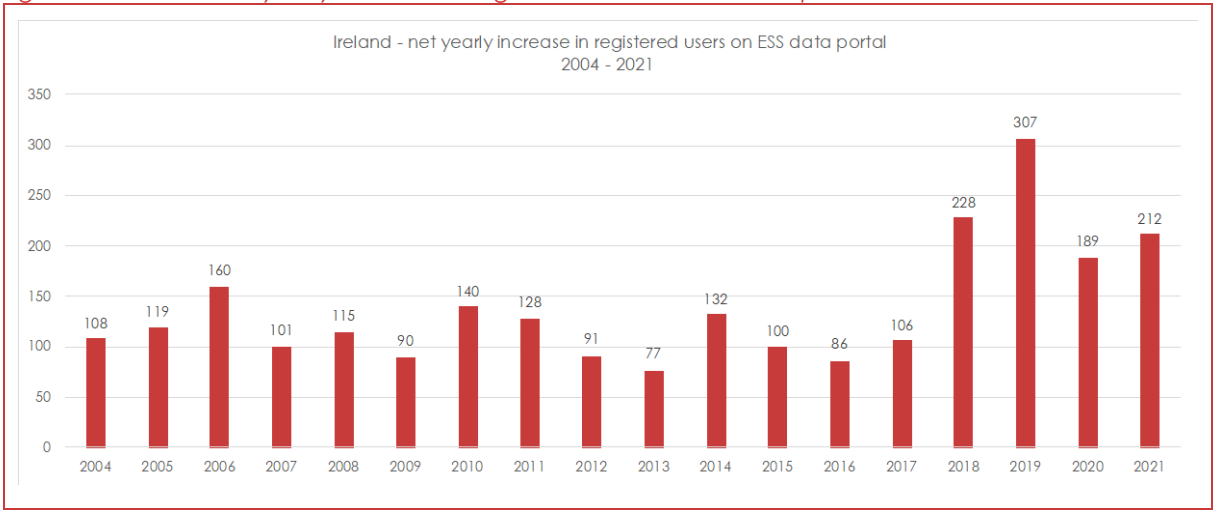


Figure 51 Latvia - net yearly increase in registered users on ESS data portal 2004 - 2021

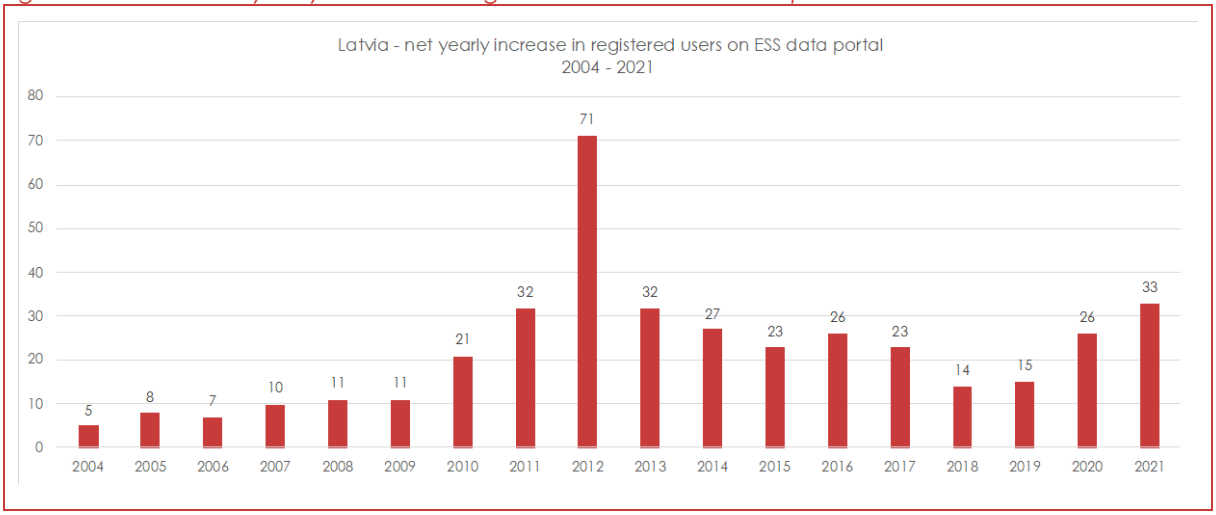


Figure 52 Lithuania - net yearly increase in registered users on ESS data portal 2004 - 2021

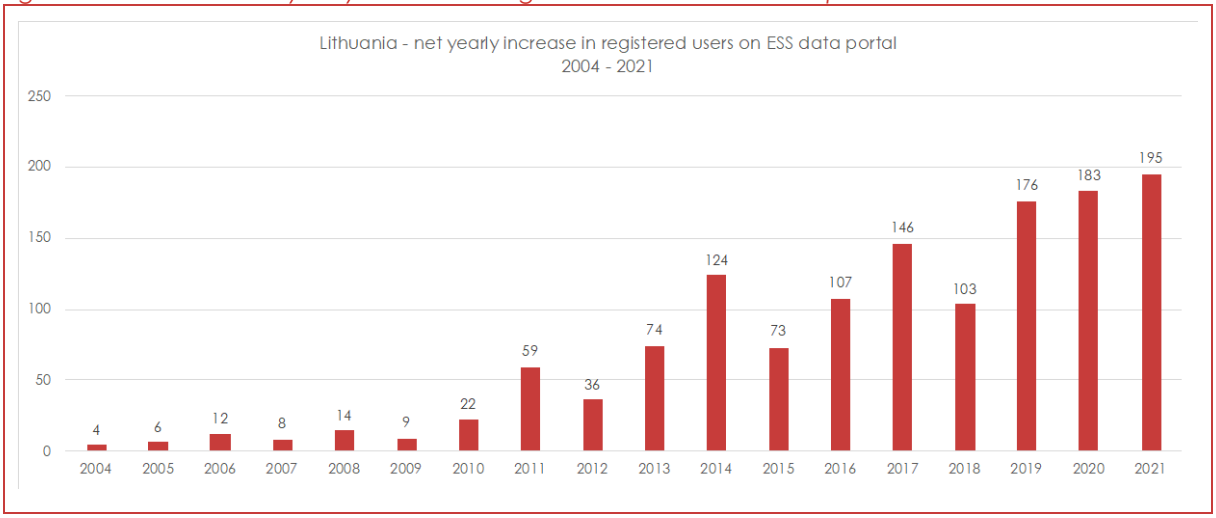


Figure 53 Netherlands - net yearly increase in registered users on ESS data portal 2004 - 2021

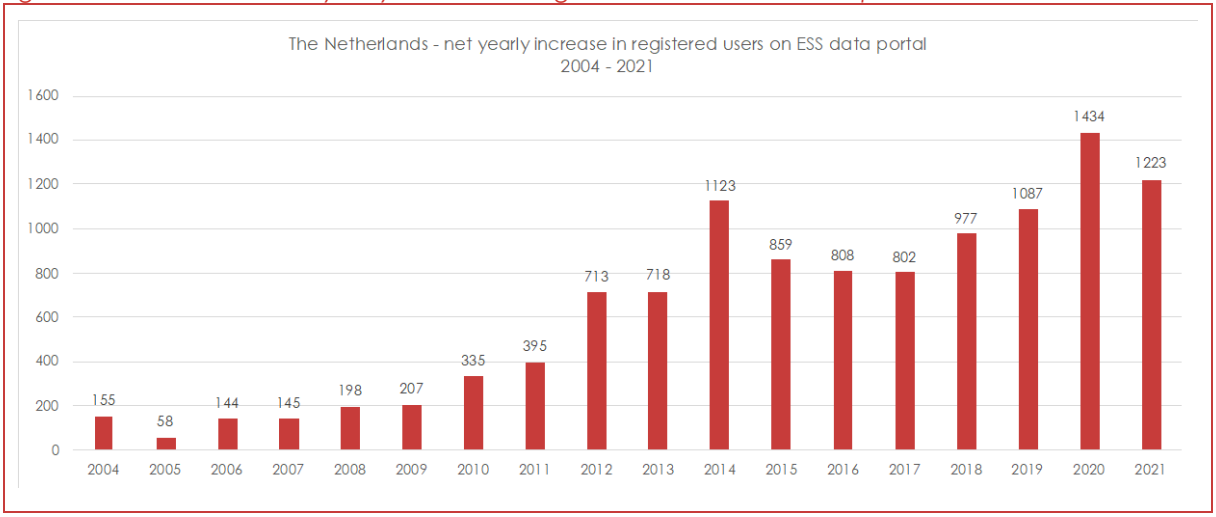


Figure 54 Norway - net yearly increase in registered users on ESS data portal 2004 - 2021

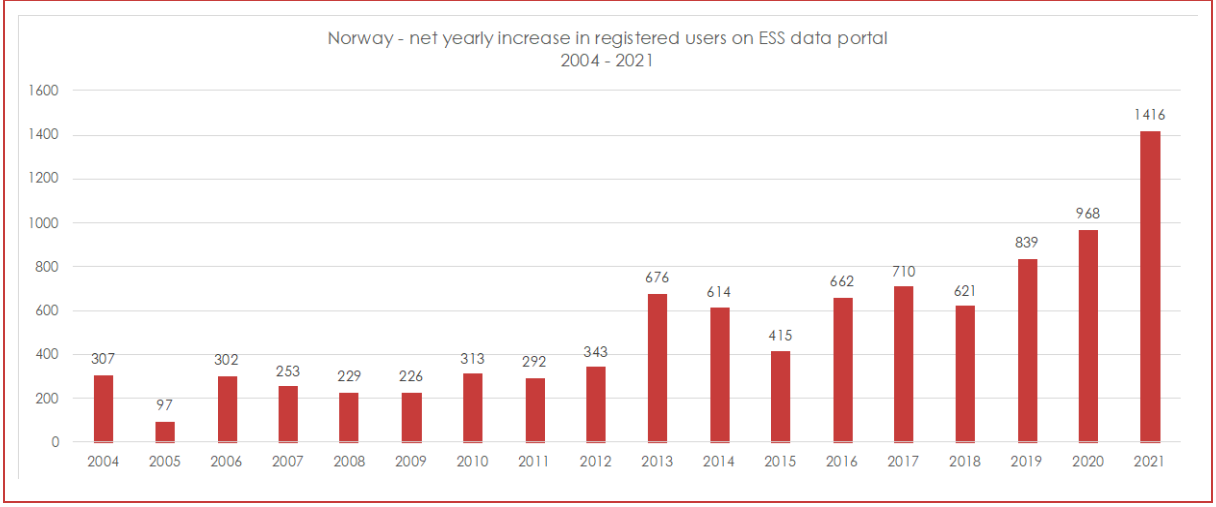


Figure 55 Poland - net yearly increase in registered users on ESS data portal 2004 - 2021

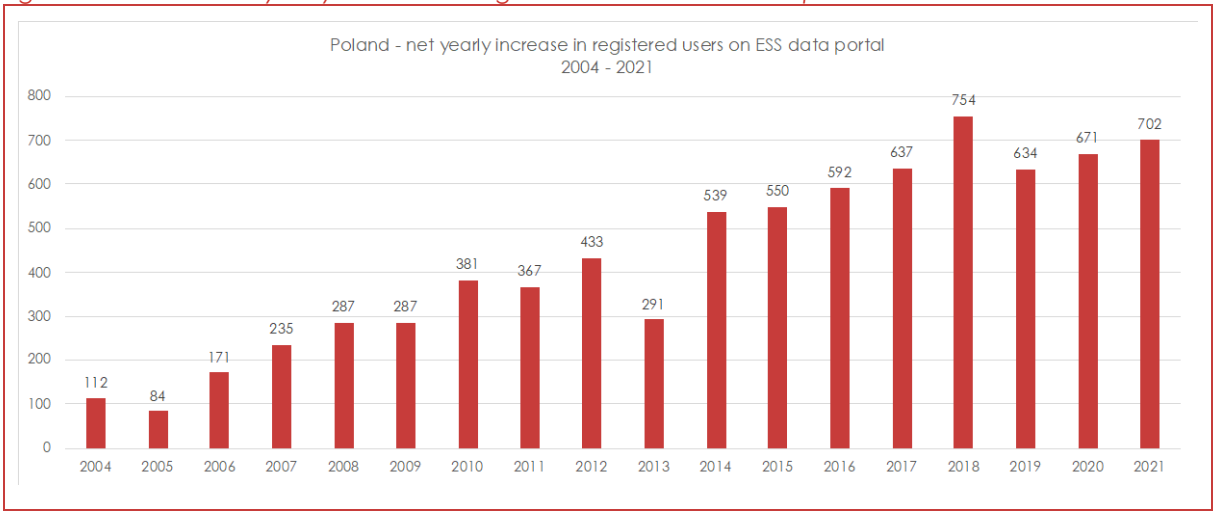


Figure 56 Portugal - net yearly increase in registered users on ESS data portal 2004 - 2021

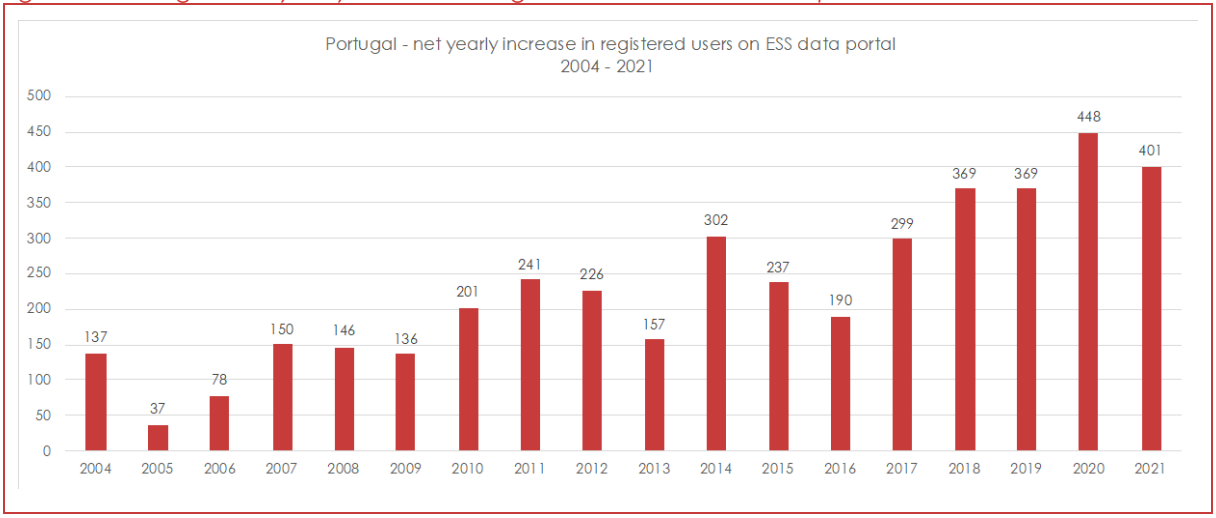


Figure 57 Slovenia - net yearly increase in registered users on ESS data portal 2004 - 2021

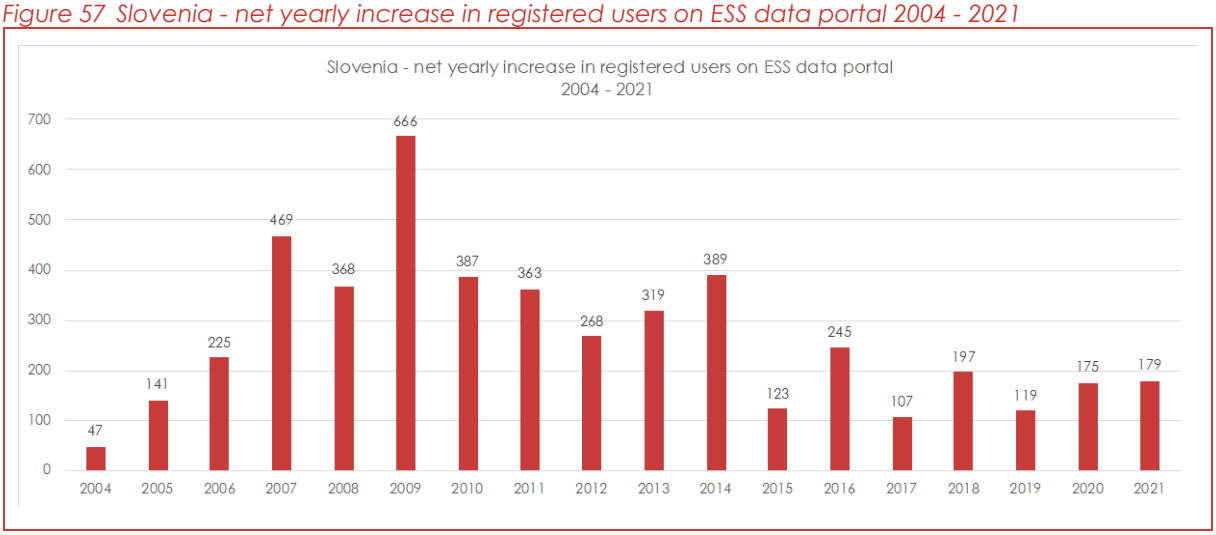


Figure 58 Sweden - net yearly increase in registered users on ESS data portal 2004 - 2021

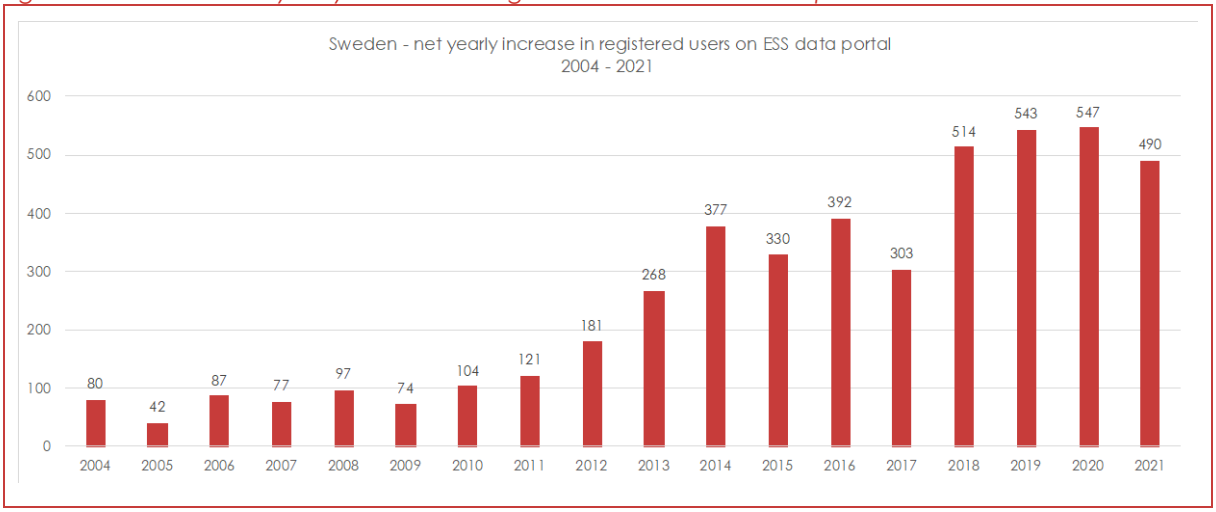


Figure 59 Switzerland - net yearly increase in registered users on ESS data portal 2004 - 2021

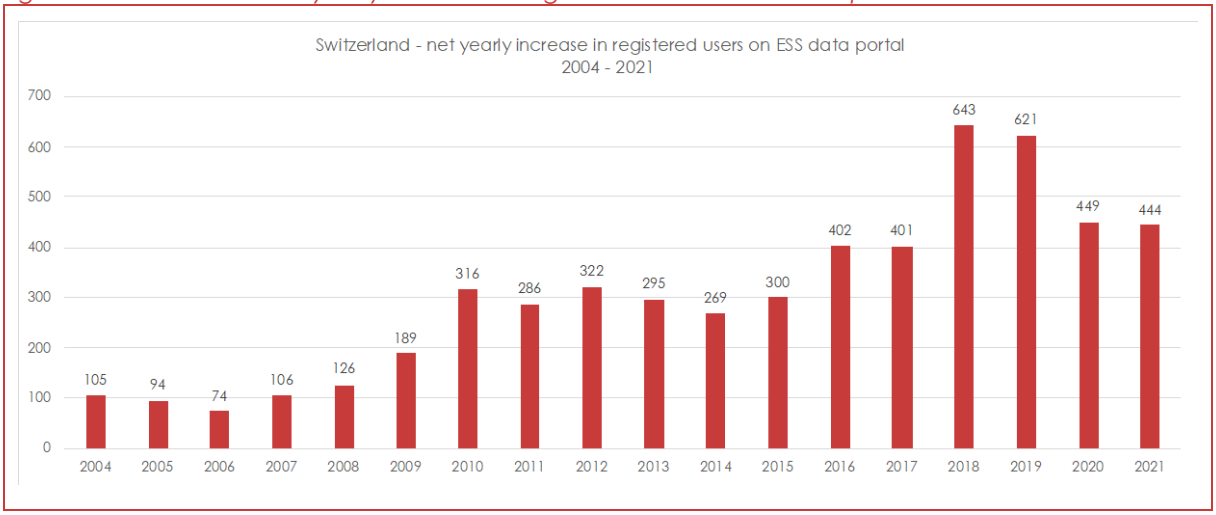
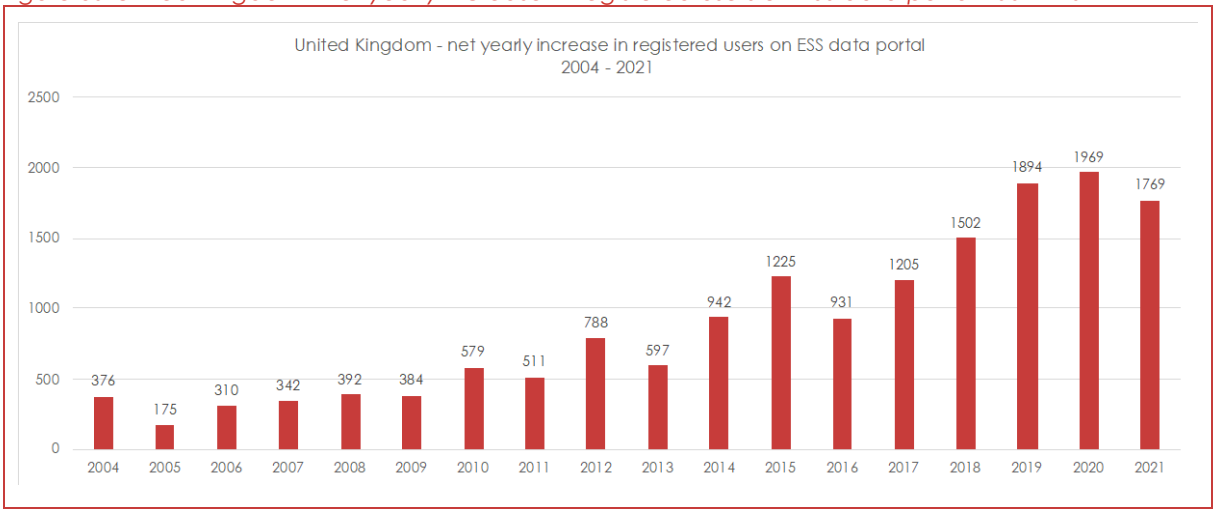


Figure 60 United Kingdom - net yearly increase in registered users on ESS data portal 2004 - 2021



B.1.2 *Net registered user increase by user type*

Figure 61 Students – net yearly increase in registered ESS users 2004 – 2021

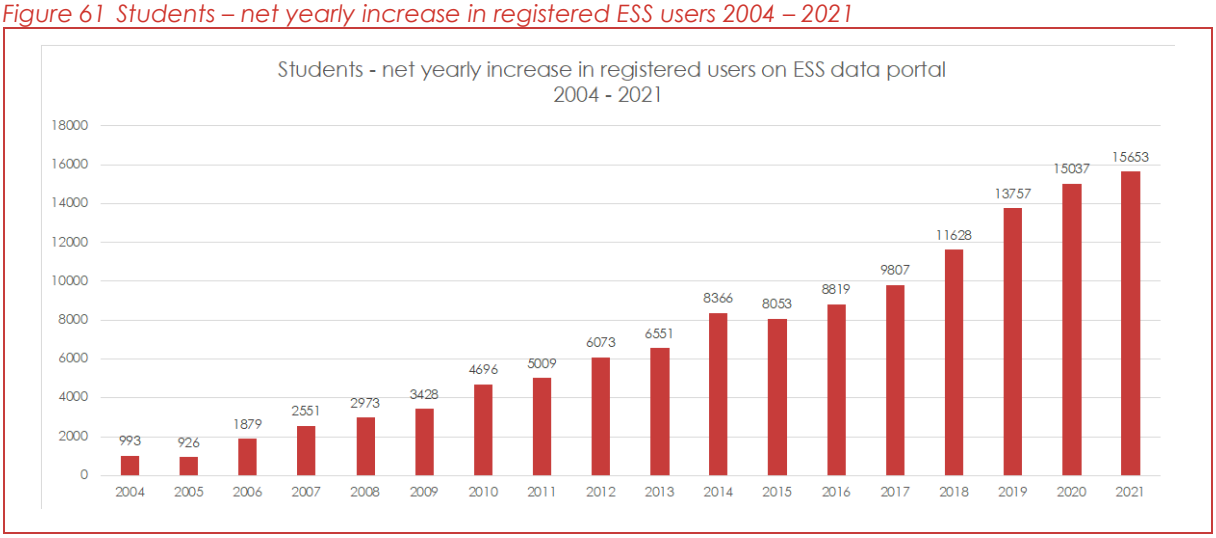


Figure 62 Faculty and research – net yearly increase in registered ESS users 2004 – 2021

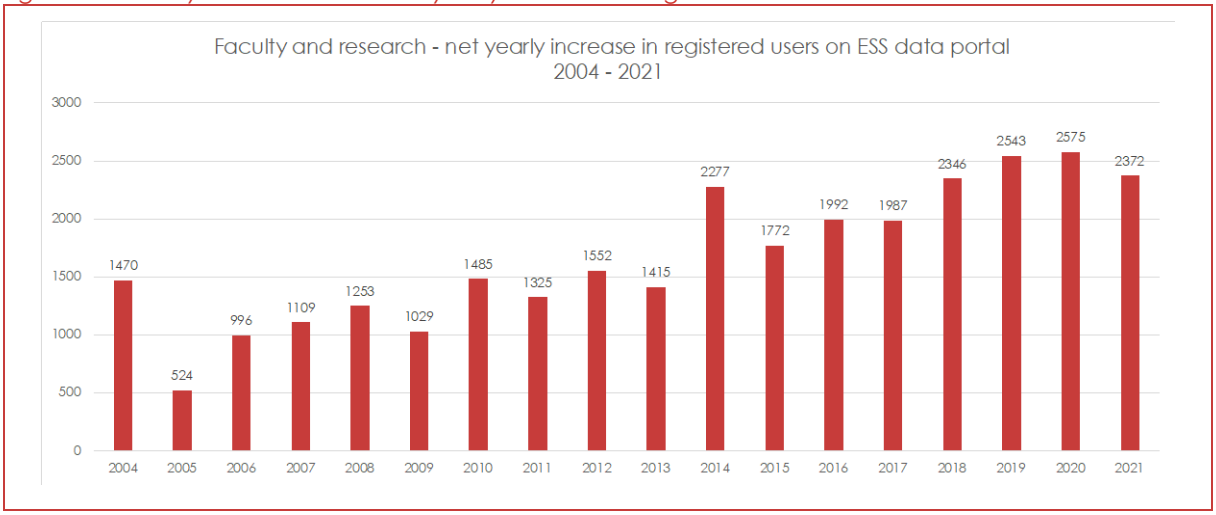


Figure 63 Ph.D. thesis – net yearly increase in registered ESS users 2004 – 2021

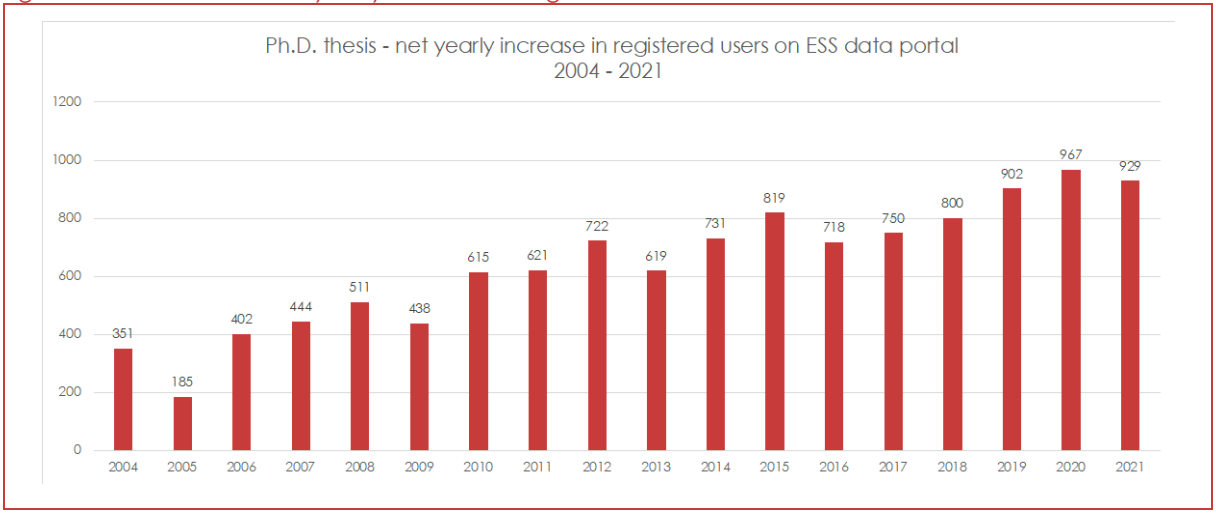


Figure 64 Private individuals – net yearly increase in registered ESS users 2004 – 2021

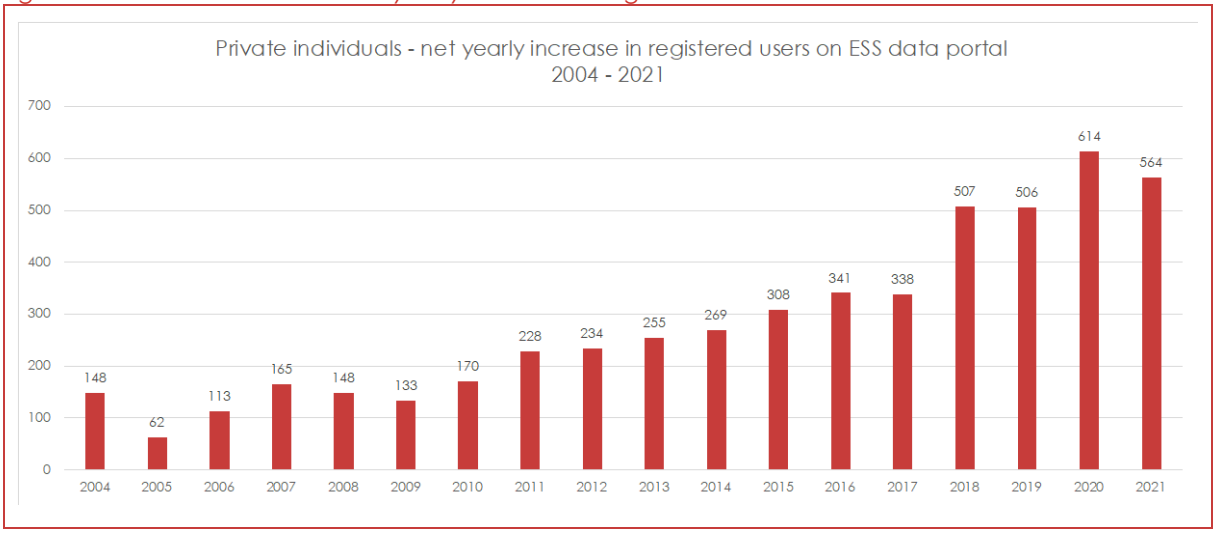


Figure 65 Organisations (NGO) – net yearly increase in registered ESS users 2004 – 2021

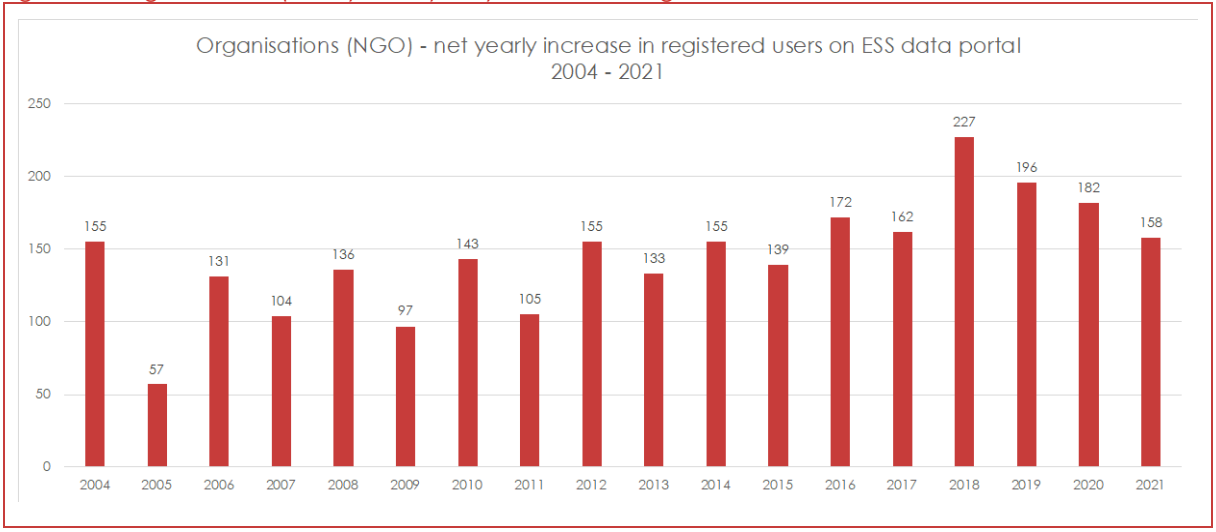


Figure 66 Government – net yearly increase in registered ESS users 2004 – 2021

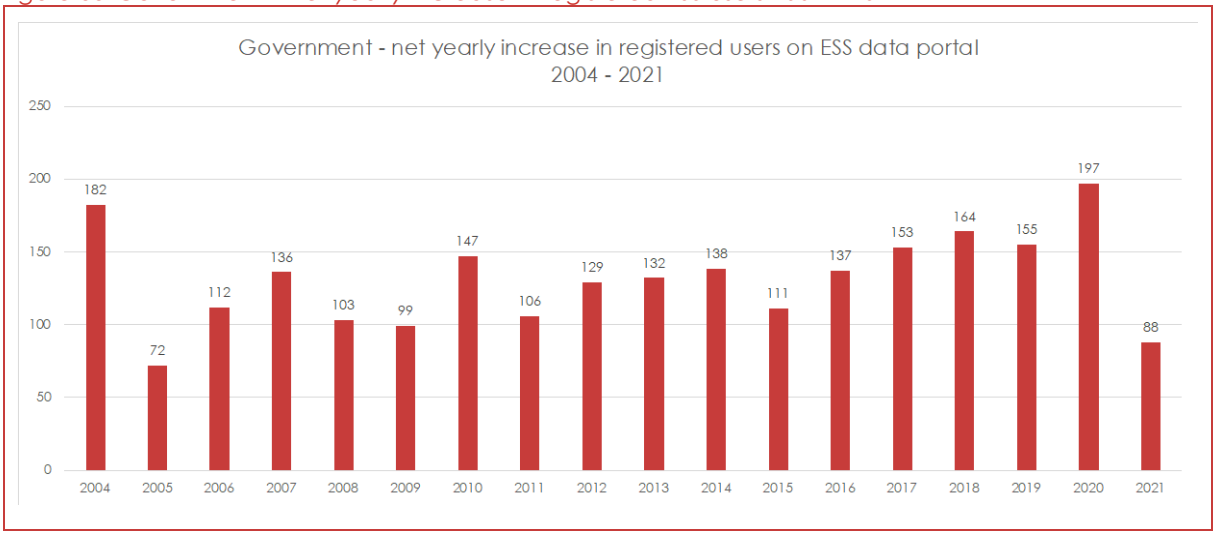


Figure 67 Private enterprises – net yearly increase in registered ESS users 2004 – 2021

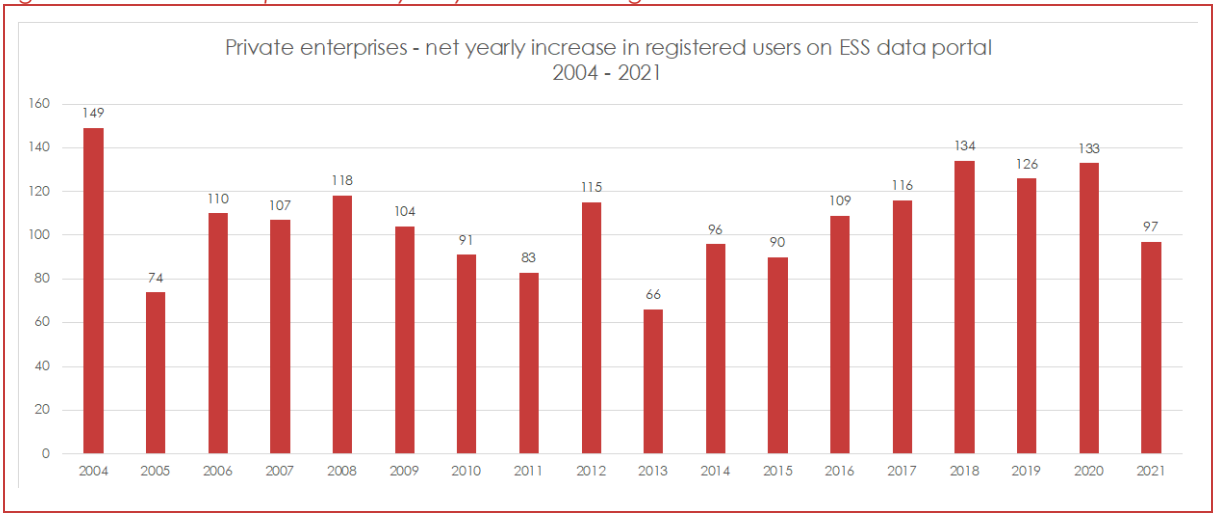


Figure 68 Non-specified users (other) – net yearly increase in registered ESS users 2004 – 2021

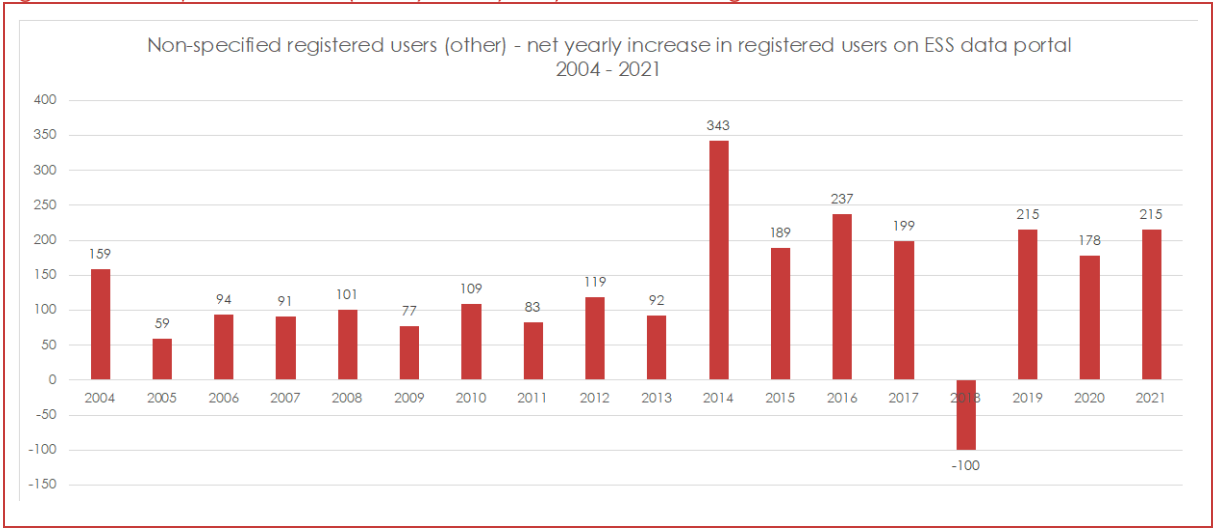
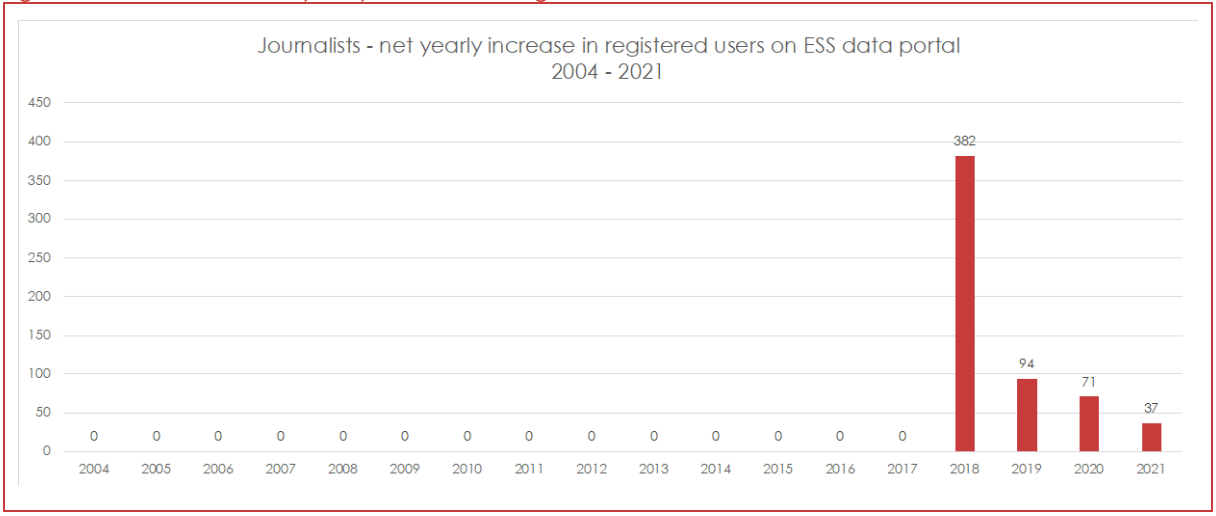


Figure 69 Journalists – net yearly increase in registered ESS users 2004 – 2021



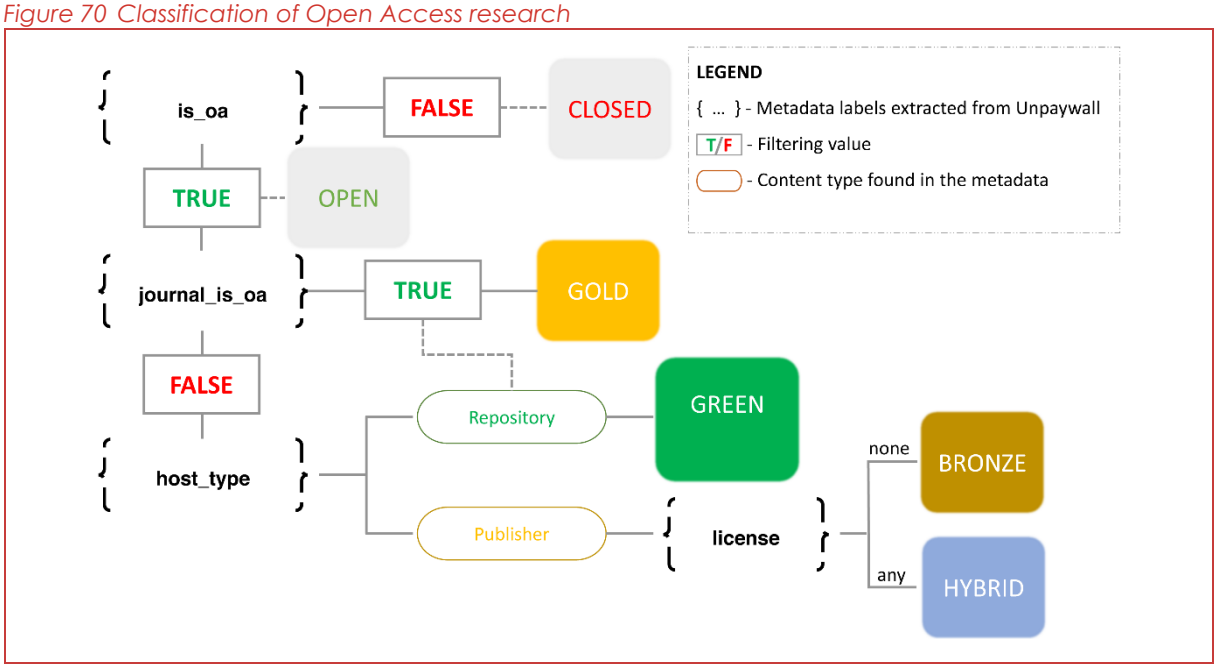
B.2 Additional Bibliometric data

B.2.1 Open Access profile

There are a number of options for open access (OA) publishing. If an article is openly available from a publisher in a journal that is completely open access, this is called Gold OA. If the journal is not completely open access, i.e. if some articles are pay-to-read, this is called Hybrid OA. If the article is available, but the license is unclear, this is called Bronze OA. These three categories, Gold, Hybrid and Bronze, are mutually exclusive. Independently from these three categories, if the article is available from a (preprint) repository somewhere it is called Green OA. This Green OA category overlaps with the other three categories of Gold, Hybrid and Bronze OA.

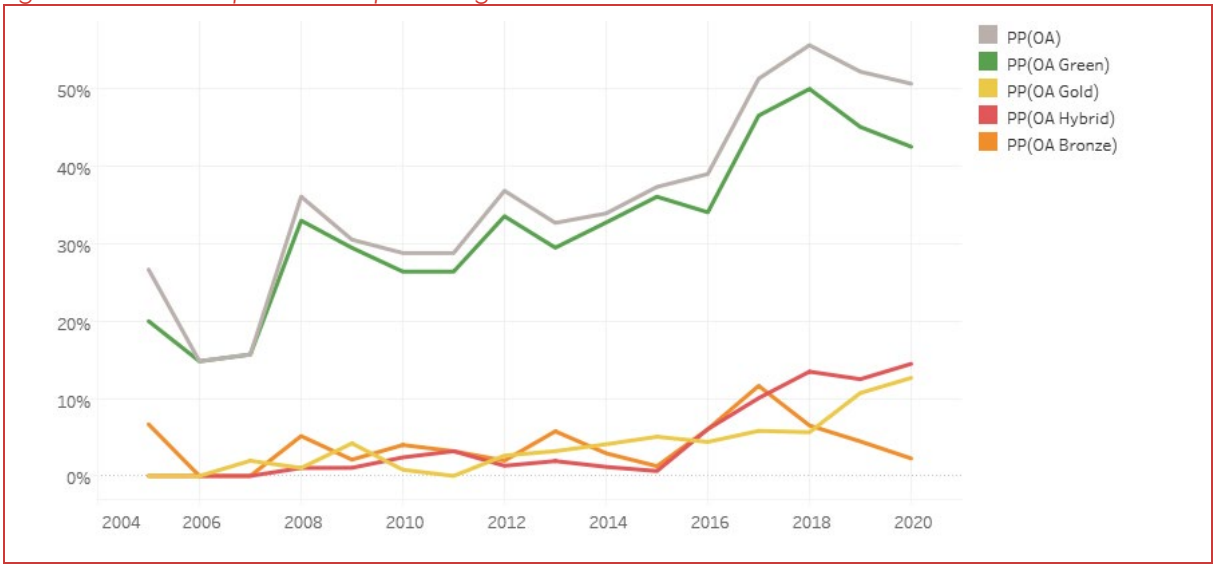
In total, 39% of the ESS publications are OA. Most of the publications are available through Green OA (35%). Most publications are available exclusively through Green OA, representing 24% of all publications, almost two-thirds of all OA publications. Only 5.0% of the publications are available as Gold OA, while 6.0% is available as Hybrid OA and an additional 4.3% is available through Bronze OA. Only 3.9% of all publications are available exclusively through a journal OA route only (i.e. non-Green), representing only about one tenth of all OA publications. Clearly, Green OA represents the largest route to OA publishing.

Figure 70 Classification of Open Access research



Robinson-Garcia, Costas, Van Leeuwen, 2020

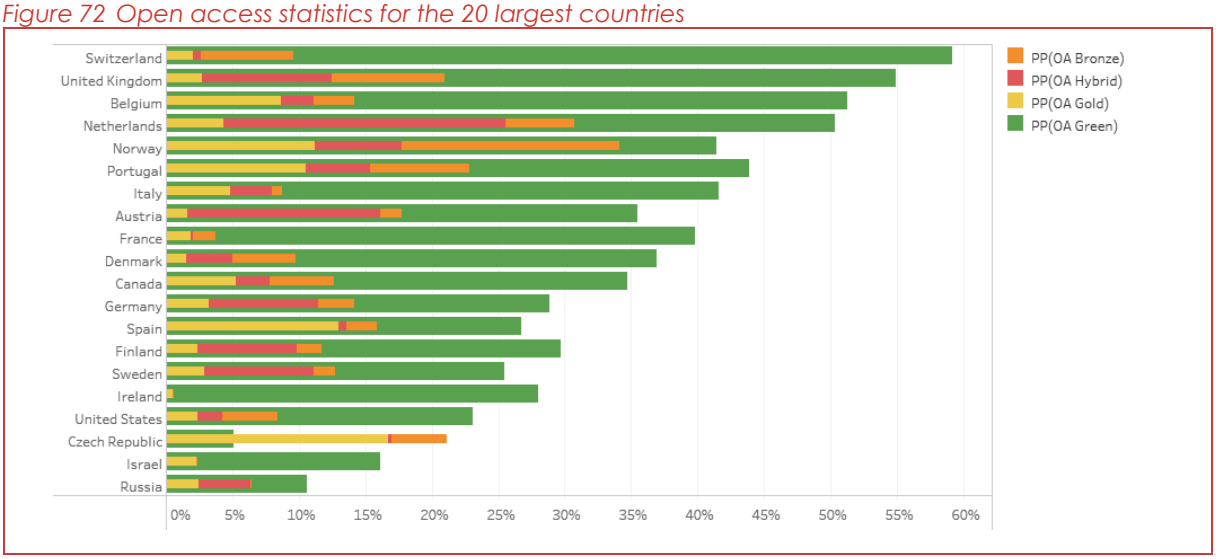
Figure 71 Trend of open access publishing.



More recent years tend to show relatively more OA publications. In 2018, over 55% of the publications were published OA. While OA publishing was slightly lower in 2019 and 2020, it still reached over 50%. Publishing before 2017 never reached above 40%. An important component of the most recent growth seems to be an uptake in Gold and Hybrid OA, but Green OA remains the most important OA route.

Overall, OA publishing is highest in Switzerland (59%) , the UK (58%), Belgium (55%), the Netherlands (54%) and Norway (53%). There are quite some differences across countries in the OA route. Norway has published quite substantially in Gold OA (11%) and Bronze OA (16%). In comparison, Switzerland and the UK published less than 3% in Gold OA, with all publications from Switzerland being available through Green OA. The UK publishes quite a lot in Hybrid OA (10%), and the Netherlands publishes even more in Hybrid OA (21%). OA publishing is substantially lower in Germany (34%), Spain (32%), Sweden (29%) and United States (26%). Spain publishes quite a lot through Gold OA (13%), while Sweden and Germany publish Hybrid OA more often (both 8.2%).

Figure 72 Open access statistics for the 20 largest countries

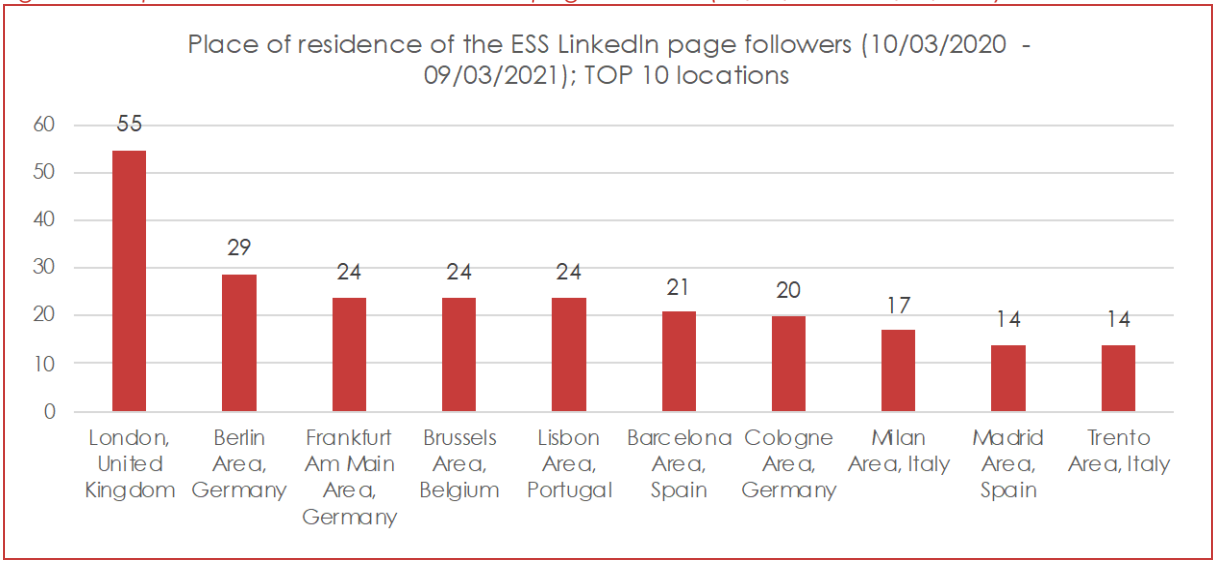


Data presented in terms of ESS publications sorted according to the overall PP(OA).

B.3 Additional social media data

The highest number of ESS LinkedIn followers come from London (55 followers), followed by Berlin (29), Frankfurt Am Main, Brussels and Lisbon (each 24 followers). This is in line with the fact that the ESS is a pan-European social survey. Interesting to note, however, that 12 followers come from Washington, D.C. and there are followers from China, India, Australia and Thailand.

Figure 73 Top-10 locations of the ESS LinkedIn page followers (10/03/2020 - 09/03/2021)

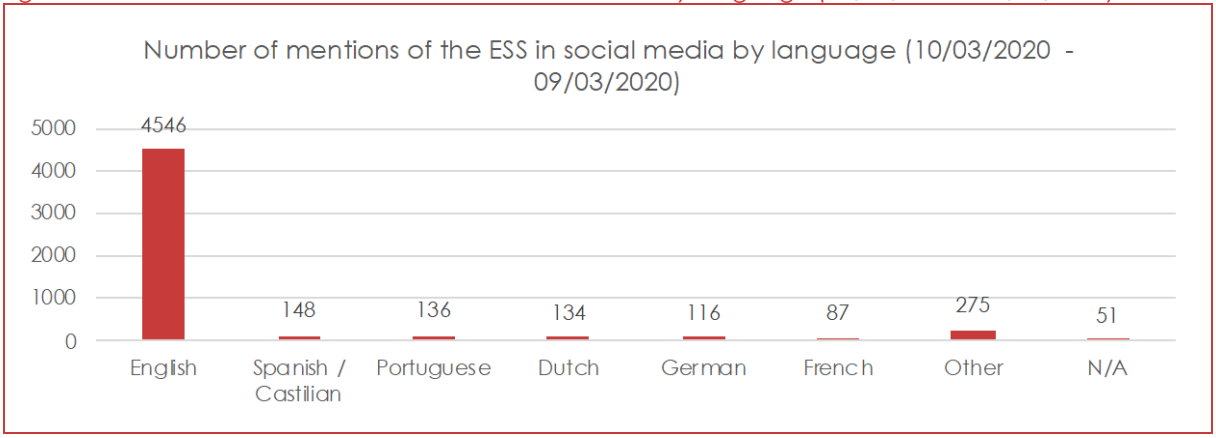


Source: LinkedIn analytics; analysis by Technopolis.

B.3.1 Language of the third-party mentions

English is by far the most dominating language of the social media posts mentioning the ESS (4,546). Spanish / Castilian came in second with (148), followed by Portuguese (136) and Dutch (134). The dominance of English on social media is not surprising and our previous analysis of the social media echo of Eurobarometer pointed to the identical pattern.

Figure 74 Number of mentions of the ESS in Social Media by language (10/02/2020 – 09/03/2020)

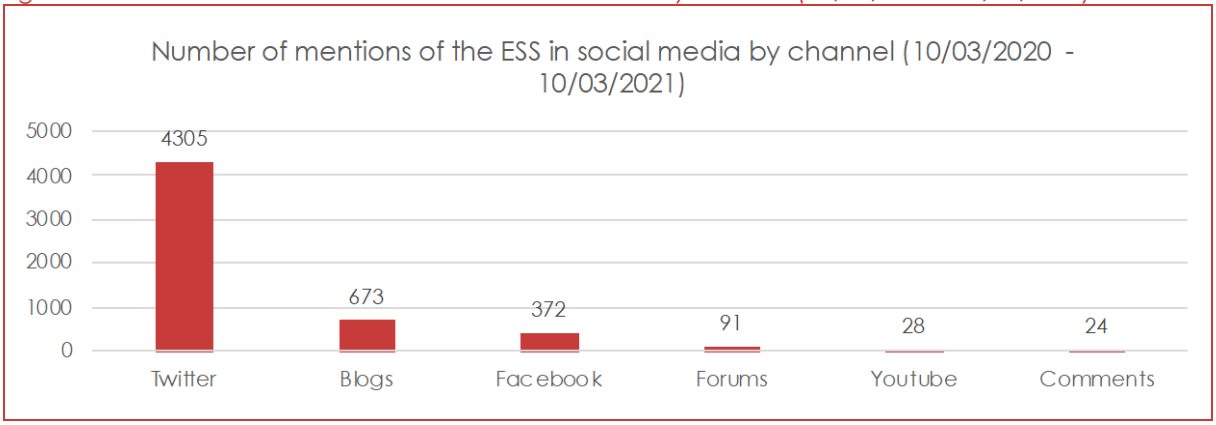


Source: Meltwater analysis by Technopolis

B.3.2 *Overview of the social media channels*

More than 78% of all posts mentioning the ESS originated on Twitter. Posts on various blogs came in second (673 posts). Furthermore, there were 372 Facebook posts and 28 YouTube videos produced with mentions of the ESS.

Figure 75 Number of mentions of the ESS in social media by channel (10/03/2020 - 10/03/2021)



Source: Meltwater; analysis by Technopolis.

B.3.3 *Qualitative review of the content of selected media and social media posts*

The quantitative analysis of the third-party social media mentions of the ESS presented above provides a good overview of the volume of the echo of the ESS on social media and some additional characteristics, however, it does not provide much information on the content of the social media posts in which the ESS was mentioned, their authors and the context in which the ESS was mentioned.

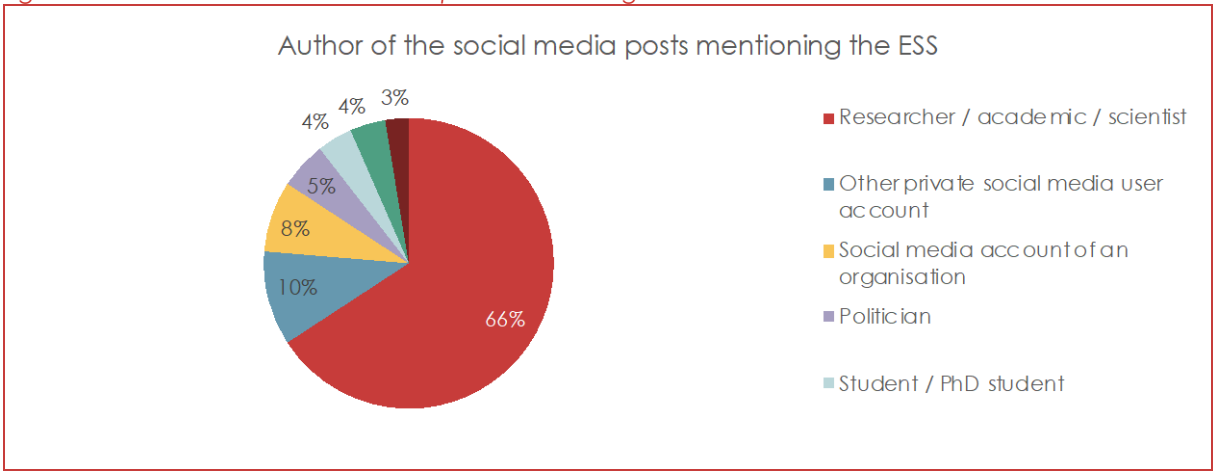
Therefore, we complemented the quantitative analysis with a qualitative review of the content (text, additional visuals and authors) of selected social media posts. We reviewed 76 social media posts from the period 10/03/2020 – 09/03/2021 (all from Twitter; all with the engagement higher than 20) with the highest engagement rate (as per the Meltwater analysis) and reviewed each of them manually focusing on a set of pre-set attributes. Answers for each of the attributes were registered in a standardised way, which then allowed us to present the results in the form of charts. We also reviewed 80 online news articles written by third parties and mentioning the ESS and added the data to the analysis (these were identified via the ESS media monitoring produced by Stefan Swift and by Meltwater). The section below provides an overview of the results.

B.3.4 *Type of authors mentioning the ESS*

Twitter posts

Below we provide an overview of the author of the social media posts mentioning the ESS For this attribute, we analysed the social media posts separately from the online news articles. Our review shows that in 66% cases, it is researchers / academics / scientists tweeting about the ESS. Other categories include accounts of organisations (10% of the posts), politicians (5%), students / PhD students (4%), journalists (4%) and other private social media user accounts (10%). This confirms that the ESS, as one of the research infrastructures, finds its way to the target audience also on the social media.

Figure 76 Authors of the social media posts mentioning the ESS

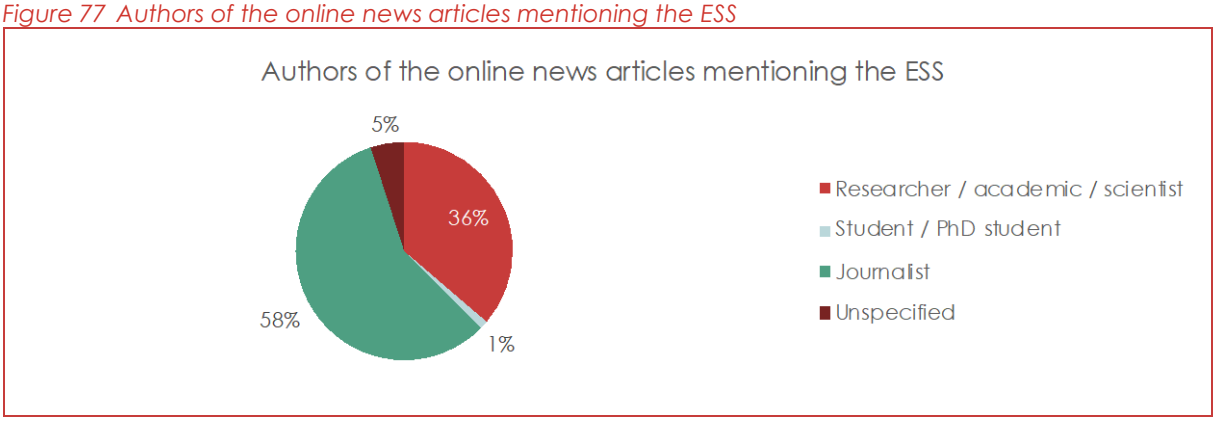


Source: Technopolis; base: 76 social media posts with the highest engagement on Twitter (as per Meltwater)

Online news articles

Journalists authored 58% of the reviewed online news articles. More than one third of the articles was authored by researchers.

Figure 77 Authors of the online news articles mentioning the ESS

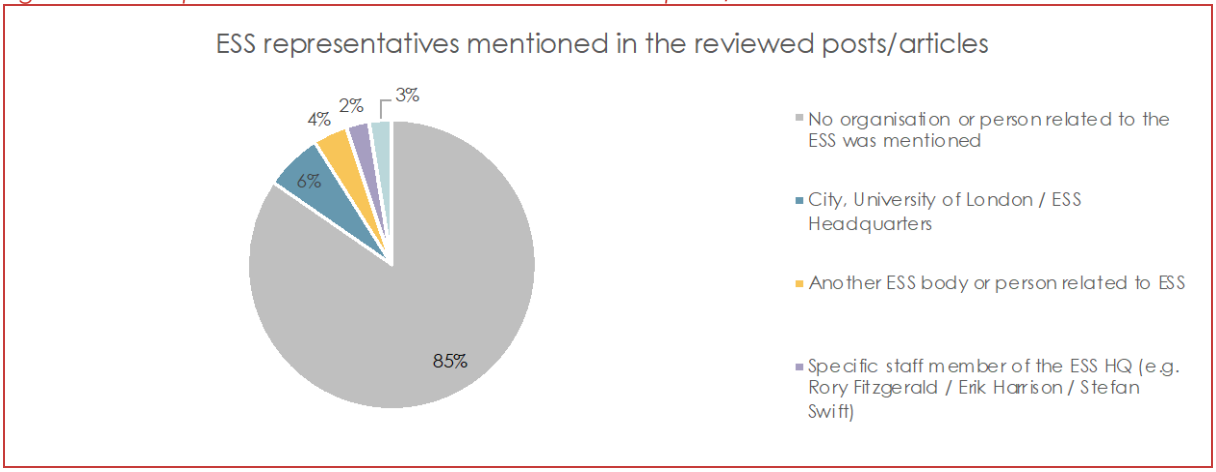


Source: Technopolis; base: 80 online news articles with the highest engagement on Meltwater

B.3.5 ESS representatives and bodies mentioned in the posts / articles

Figure 78 provides an overview which ESS representatives / ESS bodies were mentioned in the posts / articles. In 85% of the cases, there were no mentions of this sort. In 6% of the reviewed posts/articles, City, University of London was mentioned. The Norwegian Centre for Research Data (NSD) was mentioned in 4% of the cases. A specific staff member of the ESS HQ (e.g. Rory Fitzgerald, Erik Harrison, Stefan Swift etc.) was mentioned in 2% of the cases. Finally, in 4% of the posts/articles, the author mentioned another ESS body or person related to the ESS. More specifically, these were: the University of Essex, Sir Roger Jowell, Professor Shalom Schwartz, Dr Susan Banducci, Professor Terje Eikemo and Caroline Costongs.

Figure 78 ESS representatives mentioned in the reviewed posts/articles

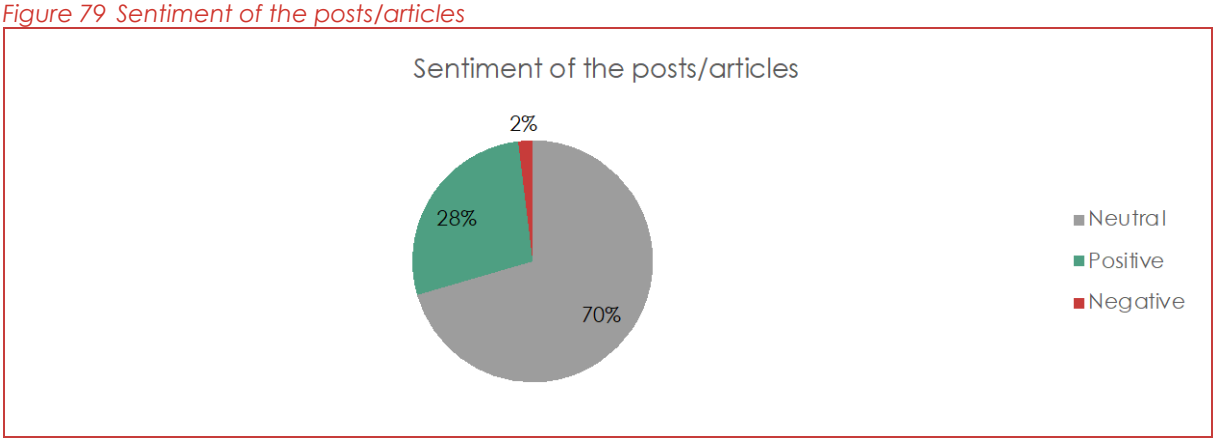


Source: Technopolis; base: 156

B.3.6 *Sentiment of the posts/articles*

As part of the review, we also assessed the sentiment of the posts/articles. A large majority of the reviewed content (70%) was of a neutral sentiment. More than a quarter of them was positive (28%) in relation to the ESS and only 2% negative.

Figure 79 Sentiment of the posts/articles



Source: Technopolis; base: 156

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