

RESEARCHERS' VIEWS ON COMMUNICATION AND OPEN SCIENCE IN SWEDEN

English Summary

ENGLISH SUMMARY

Researchers' communication and engagement with wider society has long been a subject of debate among decision-makers and researchers as well as within civil society and industry. Higher Education Institutions in Sweden are required to "collaborate with the surrounding society as well as inform others about their activities and ensure that research findings produced by the university are utilised" as stipulated in the second paragraph of the Swedish Higher Education Act. The importance of engaging and communicating with society is also clearly emphasised in the latest National Research Bill and in recommendations published by the Government Inquiry on Governance and Resources in February 2019.

Also connected to issues relating to communication and engagement with society is the move towards open science. In 2016, EU member states adopted conclusions from the Competitiveness Council to transition to an open science community. Open science is about making research more accessible and transparent to other researchers as well as people outside of the research community. This can be achieved by making research findings and data freely available and by involving the public and other stakeholders in all or parts of the research process.

In the spring of 2019, 3,699 researchers at 31 Swedish universities responded to a survey investigating their views on communication and open science. It is

hoped that the results will lead to more informed dialogue about what researchers think, need and already do in order to meet increased expectations around communication and open science from funders, university leadership, the media, the general public and policy makers. The report also includes the results of a smaller survey sent to communication professionals employed at higher education institutions and other organisations, of whom 169 responded.

The study was led by the Swedish non-profit organisation VA (Public & Science) in collaboration with funding bodies Formas, Forte, Riksbankens Jubileumsfond, the Swedish Research Council and Vinnova.

Overall, the survey shows that researchers want to engage in communication with the outside world to a greater extent than they currently do today, but are hindered by both internal factors; such as lacking knowledge and training in communication, and external ones; such as a lack of clarity about what resources are available to support communication activities. Six out of ten researchers are familiar with the term open science and associate it primarily with the issue of open access. The majority of researchers believe that the benefits of open science outweigh the drawbacks, but on the question of whether it will make their own working lives easier or more difficult, researchers are clearly divided.

A selection of the results are presented below.

COMMUNICATION

- Nine out of ten researchers (90 percent) are **positive about communicating** their research to the outside world. Older and more senior researchers are generally more positive than their younger colleagues.
- Over half (51 percent) of the surveyed researchers **would like to spend more time** on science communication than they do today. Researchers in the arts and humanities want to spend more time on communication compared to other those in other fields. Women want to dedicate more time to science communication than men.
- The most important reason for communicating their research is that **results should be utilised within society**. The second most important reason is to ensure that **research contributes to public debate** followed by **raising awareness about research within society**. Researchers from different research areas have partly different reasons for communicating research. To enable research to contribute to public debate is a more important reason for researchers in the humanities and social sciences than those in other research fields.
- Almost half of the researchers, 46 percent, believe that researchers who devote a great deal of time to science communication are **positively valued by their colleagues**. Sixteen percent feel that researchers who spend a lot of time on communication activities are negatively valued by colleagues.
- Four out of ten researchers (40 percent) agree completely or to a high extent that **researchers should limit themselves to their own subject and research field** when communicating with the public. Thirty-five percent somewhat agree and 23 percent agree to a low extent or not at all.
- According to the researchers, the most important target audiences to communicate with are **policy makers and politicians**, followed by **the general public** and **specific professional groups that are directly affected by the research being carried out** (e.g. lawyers, engineers or doctors). The most common group that researchers currently communicate with are specific professional groups that are affected by the research. Communication with business/ industry is much more common among researchers in technology than among those in the natural sciences or the arts and humanities.
- The most common science communication activity is participating in **open lectures or panels aimed at the general public**, something that almost a third (30 percent) of the researchers have done in the past year. The second most common activity is to **write popular scientific content** for the public. Printed and web-based materials has been written by one fifth (21 percent) of the researchers, respectively.
- Almost seven out of ten (69 percent) of the researchers usually communicate their research **once the project is completed**. Forty-two percent say that they also often communicate **during the course of a project**, and 26 percent usually do so **before the project starts**.
- Most researchers (69 percent) use **social media** in one way or another in the context of their work as a researcher. The most common social media is ResearchGate, followed by LinkedIn and Facebook. Twitter is the fourth most common medium, albeit the channel that is used for the most purposes. Twitter is not only used by researchers to inform others about their research and to communicate within academia, but also for advocacy work and opinion forming, as well as for communicating with journalists and the media.

- Four out of ten (41 percent) of the researchers feel completely or fairly well **equipped to communicate their research with the outside world**. Male researchers generally feel better equipped than female researchers. This difference is particularly evident among researchers in the arts and humanities. The group in which a relatively large proportion feel poorly equipped is doctoral students, where a quarter feel poorly or not at all equipped to communicate their research with the outside world.
- The most common barrier to engaging in communication is having **too many tasks that have higher priority** (selected by 64 percent of the researchers), followed by a **lack of allocated resources for communications work** (37 percent) and **difficulties finding suitable opportunities and/or target audiences** (28 percent). Five percent see **concerns about threats and harassment** as an important barrier. However, this is more common among younger women under 30 years of age (12 percent) and among female researchers in the arts and humanities (10 percent).
- Less than a third (27 percent) of the researchers have undertaken a **course or training** in how to communicate their research to the outside world. Over half (54 percent) have not had the opportunity to undertake such a course. Among those who have been on a course, the majority (70 percent) say that they feel slightly better equipped to communicate their research following it. Sixteen percent say they feel much better equipped and ten percent not at all better equipped.
- Almost half (48 percent) of the researchers have **poor knowledge about the type of support they can get from communication professionals at their institution** and a fifth say they have very poor knowledge. Knowledge is slightly better among researchers at Swedish colleges than those employed at universities.
- According to the researchers, the most important concrete measure to get researchers to do more communication is having **specifically allocated resources for communication work**, which is raised by 46 percent. In joint second place, are **more invitations to participate in communication activities** and if it was **valued more at promotion/recruitment**, both of which were mentioned by just less than three out of ten researchers (29 percent). More women than men say that if they had **more personal knowledge about how to do communication effectively**, whereas more men than women say if the outside world showed a greater interest in their research. Communication activities being more valued is selected to a greater extent by PhD holders not qualified with the Swedish title “docent” compared to more senior researchers or postgraduate students.

OPEN SCIENCE

- More than six out of ten (62 percent) researchers **have heard of open science**. Men are more familiar with the concept than women. Among professors, 70 percent have heard of open science, compared with 58 percent of postgraduate students. No major differences can be seen between scientific fields, however, the greatest awareness is in the social sciences and natural sciences (66 percent each) and the lowest in medicine and health science (57 percent).

- By far the most common association with open science is the issue of **open access**, which 93 percent of researchers familiar with the term open science associate with the concept. Other common associations are **open data** (70 percent) and **open source** (51 percent). A smaller proportion associate **citizen science** (14 percent) or **altmetrics** (10 percent) with open science.
- A large group of researchers (43 percent) believe that **the benefits of open science outweigh the drawbacks** and 16 percent see almost **exclusively benefits** with open science. One fifth (20 percent) perceive about **the same amount of benefits as drawbacks**, while eight percent consider the **drawbacks to be greater than the benefits**. Men are more positive towards open science than women. Among postgraduate students, 71 percent consider the benefits to be greater, compared to 49 percent among professors. Researchers within the natural sciences and technology generally perceive more benefits with open science compared to researchers in other areas, particularly the arts and humanities.
- On the question of whether open science will **make their own work easier or more difficult**, researchers are clearly divided. One third think it will make things **easier** (31 percent), another third that it will make it more **difficult** (29 percent) and the final third that it will **neither make it easier nor more difficult** (29 percent). The belief that open science will make your work easier is greatest among postgraduate students (40 percent think it will make it easier) and lowest among professors (where the corresponding figure is 24 percent). Researchers in technology and the natural sciences are more likely to think that open science will make things easier (38 and 37 percent, respectively) compared to researchers in the social sciences (24 percent) or the arts and humanities (26 percent).
- The research community also has mixed opinions about **alternative methods of measuring research impact** (known as altmetrics). Twenty-seven percent believe that altmetrics is a **fairly or very poor** complement to traditional methods of measuring impact, while 33 percent think it is **fairly or very good**. Postgraduate students are more positive about altmetrics (42 percent are positive), while professors are the least positive (26 percent positive).
- Researchers are generally more positive towards research being **open to observation** from the outside world, rather than **participation/influence** in research. Researchers are more open to both influence and participation from the outside world at the beginning of the research process (such as when setting research priorities and funding) and at the end (such as when using results), compared to during the implementation or evaluation of on-going research.
- Four out of ten researchers have experience of projects where **volunteers** (non-researchers) have participated in or contributed to the research process. Most commonly this involves **data collection, communication or contributing project ideas**. Researchers in the social sciences have the most experience of using volunteers whereas researchers in the natural sciences have the least experience.
- Almost four out of ten (37 percent) of researchers have heard of the concept of **citizen science**. Older and more senior researchers are more familiar with citizen science than younger researchers and postgraduate students. Among those familiar with the concept, the majority (62 percent) are **fairly or very positive** about citizen science. Differences can be found, for example, between different research fields and career phases, with researchers in the natural sciences more positive than those in the arts and humanities (71 and 51 percent, respectively), and postgraduate students being more positive than professors (70 and 49 percent, respectively).

COMMUNICATION PROFESSIONALS

- A smaller survey aimed at communication professionals working at Swedish universities and other organisations reveals both similarities and differences compared to the researchers' views on communicating with the outside world.
- According to communication professionals, the most important target audiences for researchers to communicate with are **journalists working for the daily press, radio and TV. Decision-makers and politicians**, as well as **journalists at popular science magazines**, are also seen as important target audiences by the communication professionals. The greatest difference compared to the researchers' responses is that the communication professionals value communication with journalists a lot more highly.
- Slightly more than half of the responding communication professionals believe that researchers who spend a lot of time on communication are **valued fairly or very positively by other researchers**. Compared to the responses of the researchers themselves, communication professionals seem to have a slightly more positive view of how researchers that do a lot of communication are valued by colleagues.
- Similar to the researchers themselves, communication professionals find that the biggest barrier that researchers face when doing communication is **other tasks taking higher priority**. However, communication professionals list a **lack of knowledge about how to effectively communicate research** as the second biggest barrier, which is ranked lower by the researchers themselves.
- The main barrier that communication professionals experience themselves when trying to support researchers with communication is **motivating researchers to undertake communication activities**. At the same time, the third most important barrier is a **lack of resources to meet the demand from researchers**.
- Both communication professionals employed at universities and at other organisations **spend more time communicating research themselves than supporting researchers to communicate**. Six percent of communication professionals employed at universities spend half or more of their working hours supporting researchers undertaking communication activities.



Vetenskapsrådet

