

# Visions, needs and requirements for (future) research environments: An exploration with ERC Grantee Kristian Bernt Karlson

*Katharina Flicker (TU Wien), Kristian Bernt Karlson (University of Copenhagen)*

Researchers are at the very heart of the EOSC: So what do researchers really need to do cutting-edge research? How do they think the EOSC could support them in their endeavours? Let's see what Kristian Bernt Karlson, ERC Grantee and Associate Professor at the University of Copenhagen, has to say.

**“However complex the structure behind the EOSC, it should never be a problem for the end user”**

**TU Wien:** What does your research currently focus on?

**KBK:** My main research areas include educational stratification, social mobility, quantitative methods and social science methodology. These four areas, however, can actually be assigned to two categories. One of them is about intergenerational social mobility. For example, I look into social inequalities and how life courses are shaped by families, the state and educational as well as social policies. The other main theme is about developing different tools for measuring and quantifying mobility research in specific, but – more broadly – also methodologies in other scientific disciplines both inside and outside the Social Sciences. In short, I deal with social mobility and methodologies.

**TU Wien:** What datasets are you working with?

**KBK:** Currently, I work with a range of datasets from national surveys to international surveys, including data from big collaborative programs such as the European Social Survey. These days I also use data from the Danish administrative registers. These population wide databases have extensive information on each Danish

citizen and are updated annually. We sometimes try to link the aforementioned surveys with such registers to derive new insights from that. Within the Social Sciences, I would say, I am using almost all types of data you can imagine.

**TU Wien:** OK. Are there any challenges you face with regard to that?

**KBK:** Procuring data access. This might be a widespread challenge – especially after the GDPR came into play. I must say, however, that nothing changed dramatically in Denmark because the rules concerning data used to be very similar to the GDPR anyways. The GDPR brought about a change in terms of new definitions of the different roles of data in data management processes though.

**“Living up to basic scientific principles – such as reliability, validity and accuracy – is absolutely essential. For that, we need to trust data quality”**

Back to data access: In my experience, it often takes a very long time to procure access to data. Especially when you need access to data from different public institutions. Communication can be very time-consuming too and slows down the whole research process. In one instance, I had to wait one and a half year. It would be great, if there was a way of speeding up these procedures – at least after you have identified the data you need. Overarching-structures or setting up some sort of institution, or some sort of agency that coordinates all register based research to support researchers, or offices with go-to persons and experts. Such experts would have to know what is needed in terms of gaining access to specific data at specific public and private institutions that hold different sorts of data. Some sort of an online-tool, or knowledge management system, where you can find and access such information easily would also save quite some time. Having said this, I also need to stress that this works already well for some institutions, such as the administrative register at the Denmark National Statistics Office. In addition, there are digital infrastructure initiatives in Denmark who are looking into such issues.

**TU Wien:** So this need concerns your current research environment. Considering the future, where do you think science is heading?

“We need a new set of skills in e.g. reading data, evaluating data, or classifying information correctly”

**KBK:** I think Open Science and interdisciplinary research are gaining relevance. The latter is getting more important in relation to big data in

whatever form because analysing and understanding big data naturally foster interdisciplinary approaches. Thus, I dare-say that in five to 25 years, big data will play a much bigger role in the Social Sciences than it does today. Furthermore, boundaries between different disciplines are likely to be more blurred. The latter comes with a risk of letting go of the benefits of specific disciplines. Much can be learned from immersing oneself in a specific discipline – be it sociology, economics, or whatever you are interested in – because they are highly focused on specific problem areas. With some of the interdisciplinary “big data”-research I have seen so far, neither the analysis, nor the results are novel except for the use of big data. What research really needs is to kind of move beyond doing relatively rudimentary analysis. Instead, research needs to begin analysing and understanding social phenomenon by using big data and by drawing on different disciplines. However, that's where things are moving anyways.

**TU Wien:** So what kind of change do we need to get there?

**KBK:** My point is that we need to learn and draw even more from the insights of core disciplines such as Sociology, Anthropology, Economics, Psychology, Business studies... After all, we do not want to re-invent the wheel just because big data comes with new opportunities. Living up to basic scientific principles – such as reliability, validity and accuracy – is absolutely essential. For that, we need to trust data quality. At times, I feel, we have to remember that getting access to big amounts of data does not necessarily mean that they are good quality or should be trusted. It also does not mean that big data always enables us to contribute to science in terms of novel findings or societal benefits.

Thus, without putting scientific core concepts first, bigger is certainly not better.

**TU Wien:** What do you think we need to deal with that?

**KBK:** I think we need a new set of skills in e.g. reading data, evaluating data, or classifying information correctly. In connection with that, things are already changing. At least, I get the impression that educational programs in the Social Sciences are responding to these new trends. At my faculty, for example, we have a center for social data science. A new master program was anchored there. We hire new staff with the required expertise to teach within this program. In addition, we are re-structuring our bachelor program to have more of this. So, you know, this is coming.

“Open Science is a democratic tool because when someone tries to make a point, someone also should be able to back it up”

**TU Wien:** What about Open Science?

**KBK:** I think Open Science is a democratic tool because when someone tries to make a point, someone also should be able to back it up. Others have to be able to see e.g. the data and code that led to certain findings and be able to replicate the results. This too is becoming more and more common, even though there are limits to Open Science such as the sharing of sensitive data. That is just not possible. We can, however share our code, how we got the data, etc.

**TU Wien:** Having said all this, how could the EOOSC be beneficial to you?

**KBK:** As said right in the beginning, I spend a lot of time just figuring out what I need exactly to access certain data. Thus, in my case, the biggest relief would be to have some sort of European framework, infrastructures, or knowledge management systems that speed up such procedures. On a macro-level, however, it is important to think about the end user, the researcher. However complex the structure behind the EOOSC, it should never be a problem for the end user.



*Kristian Bernt Karlson received his PhD in educational science from Aarhus University, Denmark, in 2013. In 2016, he was promoted to Associate Professor in Sociology in 2016 at the University of Copenhagen. Karlson has been Principal Investigator on several projects related to educational inequality and social mobility funded by both public and private foundations. In 2019, Karlson received the prestigious ERC Starting Grant of the European Research Council for a project on the social mobility of siblings in more than 10 countries. The five-year grant of approx. 1.5 million Euros allows him to establish an interdisciplinary research team at the Department of Sociology at the University of Copenhagen. Karlson has published more than 20 peer-reviewed articles related to educational inequality, social mobility, and statistical methods.*