

Insights podcast: Breathing unequal air in the UK

With Tobias Rüttenauer and L'myah Sherae

Chris Coates

Welcome to Insights, the podcast from Understanding Society, Understanding Society is a longitudinal survey that captures life in the UK in the 21st Century, every year we ask each member of thousands of the same households about their daily lives. Each episode of Insights explores how people use our data. What can research tell us and how can it change things. I'm your host Chris Coates and in this episode, we are looking at air pollution and in particular how common is it for immigrant populations to live in more polluted areas. I'm joined by Tobias Rüttenauer, Assistant Professor in Quantitative Social Sciences UCL and L'myah Sherae, Director of Enact Equality a non-profit organisation which campaigns for racial justice and equality in the UK.

Tobi, you've written a paper called 'Breathing unequal air'. Can you tell us what prompted you to look at this subject?

Tobias Rüttenauer

Sure, the idea for this paper basically came from a simple but important question. So, we wanted to know, why do some people end up living in more polluted areas than others. We know from earlier research, especially in the US, that disadvantaged groups like ethnic minorities or racial minorities, are often more exposed to air pollution. But we wanted to understand how this plays out in Europe, and more specifically how it compares between England and Germany. But besides just looking at the general levels, we also wanted to look at potential causes of environmental inequality. And there are usually two prominent explanations that are used in the literature. One of them is selective siting, and the other one is selective sorting. Selective siting basically means that environmental hazards are placed selectively closer to disadvantaged groups. While selective sorting describes the process where more advantaged groups – for instance, wealthy British households – move out of polluted areas while disadvantaged groups are more likely to stay or end up in those polluted areas. Over time, obviously this selective sorting processes can lead to big differences in in who breathes clean air, and who actually lives in in polluted neighbourhoods.

And obviously to investigate this process of selective sorting, longitudinal household surveys like Understanding Society are an optimal source of information. We can basically follow the same household over time. We can look at their entire residential trajectory over 10 or 15 years. And we can link that to official estimates of air pollution levels at their place of residence. That means we weren't just looking at where people live at the moment, but also how their exposure to air pollution changes when they move from one place to another, and the huge advantage is that we observe people's actual migration trajectory, and it's linked to pollution measures like nitrogen dioxide or fine particulate matter and so on. And another contribution that we do in this project is basically that we compare two countries with very different histories of immigration and urban development. Right? So England and Germany both have very large immigration populations, but the predominant countries of origin and the patterns of inequality are quite different between those countries. So this gave us a chance to kind

of like, see how broader social and political contexts could have an impact on the level and processes of environmental inequality.

Chris Coates

And what were your main findings?

Tobias Rüttenauer

So we found that immigrant minorities in both England and Germany are consistently exposed to higher levels of air pollution at their place of residence. For instance, in England immigrants are exposed to nearly seven micrograms per cubic meter, higher levels of nitrogen dioxide and that's quite drastic. Right! That's roughly 40% above the average for native British households. And I mean, that's already a big concern that we have these cross-sectional differences here, but what's even more striking is what happens when people move from one place to another. So naturally, you would expect that if someone starts in in a very polluted area, moving would help them to get to a cleaner place, right? If you just move in a very high level of pollution, there is a high chance that that you might end up in a cleaner. And I mean, that's generally true but it's not equally true for everyone. So, if you compared two households that start in very similar neighbourhood conditions, immigrant households benefit far less from moving to a new place of residence than non-immigrant households. So, in other words, when they move they don't get the same improvements in air quality than native British households.

And the neighbourhood improvement of an immigrant household, on average, in our study was found to be half of the size of the improvement for a non-immigrant household. So that's a quite strong difference, right? But obviously it doesn't stop there, right, immigrant minorities, or the group of immigrant households, is a very broad category, and that's why we also look more closely into different subgroups here. And what we saw was that some groups are hit much harder than other groups. In England, for instance, immigrants from Bangladesh, the Caribbean, and African countries face the highest level of pollution disadvantage. So, for instance, a household from Bangladesh is exposed to nitrogen dioxide levels that are over 15 micrograms per cubic meter higher than the level that we observe for native British households. And that's also more than five times the average disadvantage we observe for immigrants from wealthy Western countries, right? So that kind of like means that it's a huge difference in which immigrant groups are exposed to the highest disadvantage here – and we find something similar in Germany, a very similar pattern, where again, Turkish immigrants are the most affected with pollution. Exposure levels roughly twice as high as those for immigrants from multi-western immigrant countries.

Chris Coates

So did you see any other differences between England and Germany?

Tobias Rüttenauer

Yes, definitely, we saw some quite striking differences between the countries, and we were, actually, we expected there to be some differences between these countries but

when we saw the results, we were actually surprised by the magnitude of these differences. So first of all, in both England and Germany immigrant households tend to start out in neighbourhoods with higher pollution levels than the native households, but the scale of the disadvantage is much larger in England. So the average pollution gap between immigrants and natives is about three times as big in England than it is in Germany, and that's something that we didn't expect to be that strong in terms of England being so much more unequal than Germany.

And I mean, we see something similar when households move. Immigrants in England, I mean, they kind of actually experienced slightly more improvements in air quality than immigrant households in Germany. But the reason for that is mostly because immigrant households in England start from a much worse condition, right? They start in much higher levels of air pollution, so there's also just much more room for improvement. When we just compare the disadvantage in the sense of how much less immigrant households improve as compared to native British or native German households, we again observe that the moving penalty that we calculate here is around twice as large in England than it is in Germany.

So again, it seems that also this residential sorting process is more pronounced and more unequal in England than in Germany. So, I would say that overall the overall patterns of inequality are kind of similar in these countries. It seems that the gap is much wider and more persistent in England than it is in Germany.

Chris Coates

And did you come to any conclusions about what's causing these disadvantages?

Tobias Rüttenauer

Yes, I mean, this is definitely, I think, the most interesting question but that's also the most difficult question to answer. So, we believe that one big factor is the sort of like urban concentration within the country. So, in England, it's what we see in the data is that around 70% of immigrants live in large metropolitan cities, and that compares to only 30% of native households who live in large metropolitan cities in the UK or in England. In Germany we observe a similar gap that again, immigrants are more likely to live in large metropolitan areas but there, it's only around 40% of immigrants who live in large metropolitan cities compared to again, like around 30% of the native population. And I mean, obviously, we know that that urban areas also tend to have higher levels of air pollution and that kind of like explains part of that disadvantage right? That immigrant minorities are just to a large extent overrepresented in metropolitan areas, and that seems to be more the case in England than it is in Germany. In Germany, I think to some extent the more medium-sized cities or suburban areas seem to offer a bit of a buffer for this difference here.

So what we kind of tried as well in the study was that we explored, whether one of the reasons for what we find here is that immigrants prefer to live in areas with more other immigrants, for instance, because they benefit from some sort of like co-ethnic networks. But we didn't find so much strong evidence that this kind of preference explains the pollution gap. So, in fact, when we adjusted for the share of immigrants in the neighbourhood, the disadvantage only was only reduced like very slightly, so the

disadvantage still persisted after that, and we think that that kind of suggests that there might be some sort of like structural barriers that make it harder for immigrant households, and especially ethnic minorities to move to cleaner and less polluted areas like suburbs or rural towns. And obviously these structural inequalities that could include things like general discrimination, discrimination on the housing market, but also the need to stay within metropolitan areas for some sort of specific jobs that immigrants are more likely to do or because of a lack of public transport that immigrants are relied on. And so, this kind of like all different things of structural inequalities that might explain this effect. But it's also hard to kind of like disentangle those structural processes.

One thing that is striking, I think, is that we find in our results that the groups that are most affected by this disproportionate exposure to air pollution, which is like Bangladeshi, Caribbean, and African immigrants, or Turkish immigrants in Germany, are also those who tend to face the highest levels of discrimination in other areas of life, right, like housing, employment, and so on. And this obviously kind of like is even worse, because it kind of like creates some sort of like cumulative disadvantage for these groups, and kind of like a cycle of inequality that that's hard to get out. To conclude overall, I think there's still a lot more to uncover. So, for instance, we could obviously go further and see or ask the question, what are the barriers that restrict immigrant households to stay in metropolitan areas to such a large extent, or also which policies can effectively protect the most affected and most disadvantaged communities at their current place of residence.

Chris Coates

L'myah, this research, it seems very relevant to one of the campaigns that Enact Equality runs calling for action on clean air for ethnic minority groups. What's your initial reaction to this?

L'myah Sherae

I think that the work and the research more broadly is fascinating. I was just taking down notes whilst I was listening, especially, actually, the last point was particularly pertinent about the fact that the people that face the worst air pollution tend to be those who face the highest levels of discrimination in other areas of life, like housing, health, and employment. I think, also the topic regarding the fact that there are some communities whereby, when they move, they go to areas with less air pollution. However, with immigrant communities that's not always the case. Again, another point that's fascinating and it's particularly pertinent to our campaign and the work that we're doing, which I guess I can go into more, into more detail shortly.

Chris Coates

So, can this research support your work? Do you think?

L'myah Sherae

Yeah, it definitely can. So one of our current priorities is tackling the disproportionate impact of air pollution on people of colour and black ethnic minority and low income

communities in particular, to groups that are more likely to live in areas with illegal levels of toxic air pollution. We launched a national campaign to amplify the voices of those who are most affected, and to highlight this disproportionate impact, particularly amplifying the voices of communities who are often left out of the climate and public health conversation. And we're now urging for action on four specific demands which range from investment in cleaner, greener transport options, to better and wider access to green spaces. We're also looking and calling for better support for upgrading older vehicles and reducing the cost of new electric vehicles. And lastly, we're pushing for stronger air quality laws and monitoring frameworks.

So, in addition to a lot of that key policy work, we also launched a campaign on social media, as we understand the fact that raising awareness around these issues is, of course, core to any of the work that we need to do essentially in the area, so ensuring that communities are aware of these issues, ensuring that we're sharing information about how groups can better protect themselves of the harms associated with air pollution, and essentially working on that community education piece. So, we launched social media campaign that gained a lot of traction. And then, following that, we held an event at the Houses of Parliament on the issue of social justice, racial justice, and toxic air pollution. In the event we had, I think, just over 200 people attend, and over 100 attempted to attend but couldn't get in due to capacity limitations. And I think, if anything, that event really goes to show how important this issue is amongst people of colour, amongst communities that are often the most affected, but at the same time the communities that often have their voices neglected within these important policy discussions. So, I think it was a really important, inspiring, and uplifting moment but also it was a moment that really did highlight the fact that there is appetite and interest there in the community, in communities across London. I mean, we had people that also travelled from other cities across England who came to attend the event, and again, just highlighting how important this topic is.

In all of the events that we do, we never just host discussions to raise awareness, we also always look at what tangible policy actions we can do off the back of that. So, following the event, we wrote to the Prime Minister and hand-delivered it to Number 10, where we called for urgent government action to gain more accountability and to basically ask and demand justice in this area. So, we highlighted the key policy demands that I referenced earlier. We demanded urgent action, and also for the government to make more effort to include those communities who have historically been left out of the discussion.

Our campaign has already secured quite a lot of support which we're really pleased about. We've had politicians that have supported from a variety of different political parties. We've had people like Bell Ribeiro-Addy MP, people like Siân Berry, Nadia Whittome, Dawn Butler, Rachael Maskell, and many more. We've also had peers from the House of Lords as well, like Lord Whitty, Baroness Natalie Bennett, Baroness Hooper, and so on. So there's really a growing number of MPs and peers who are committed to this specific environmental justice issue.

And lastly, I just wanted to highlight the fact that this campaign really fits in within our broader mission to tackle structural racial inequality across sectors, and that includes everything from education to health to migration, to housing and broader public policy. And within that work, research really is at the core. It gives our campaign legitimacy

and grounding, and it also allows us to connect genuine lived experience with real, tangible policy action, to hold decision makers to account and to utilise evidence-based demands, essentially. So that's why I found the research that we're discussing particularly interesting, because our aim is never to solely raise awareness but it's actually to mobilise communities, to influence policy and to ensure that solutions to climate and environmental injustice are developed with and for those most affected. And I think that research being at the core of that work, genuinely gives our campaigns the strength and robust grounding that they need to make a tangible impact at national level.

Chris Coates

OK, and you mentioned your own research earlier. Could you dig down into the results of that survey for us a bit?

And I think you've done some of your own research as well. You've been surveying people of colour in the UK. What's that shown you?

L'myah Sherae

So, we surveyed around 800 people from minority backgrounds. And through that survey we found that 72% want there to be a boost in investment in transport, to open up greener transport opportunities. That was by far our most popular policy ask out of all of the ones that we put forward. In addition to that, we found that 66% want more green spaces and wider access to nature, and there's a plethora of research that's already out there about the impact that having access to green space, and I mean green and blue space actually more broadly, but the impact that has on the mental health and the wellbeing of communities and the fact that 66% wanted more access to those spaces really just shows how crucial that policy ask is.

In addition to that, our survey found that 66% similarly wanted there to be more support for people and businesses to upgrade their old cars and vehicles and reduce the cost of new electric vehicles. And lastly, 59%, so just under 60%, want better laws, targets and monitoring frameworks to help clean up the air we breathe. and that research and that survey was really important for this campaign, because the hard statistics essentially, really were useful in helping us reduce the political risk of inaction.

I guess it really strengthened the case for legislative change, for more funding for our campaigns and sharing quantifiable data really just helped create tangible, impactful messaging. It helped build collective momentum around shared goals, and also I think it provided further transparency in findings that build trust with the general public more broadly. So again, highlighting that research is at the core, but also matching that with tangible lived experience that forms the basis of our campaigns going forward.

Chris Coates

Your campaign talks about the need for community informed policies, locally and nationally, are there any specific things you want to see from the government.

L'myah Sherae

Yes. So, from a broad perspective, we're urging the government to, you know, as I mentioned earlier, to really recognize air pollution as a racial justice issue, as a social justice issue, and as a public health issue. So, we really want to see that joined up thinking across governmental departments, everything from housing to health to, you know, transport policy. Obviously, also, in addition to environmental policy, too. But yeah, really creating that joined up thinking across a variety of different government departments to tackle this issue head on. I think there are a lot of political leaders who support this work and who support these policy asks. And now we're waiting for the government essentially to take action. And in addition to that, I mean, I think I would love to see the government introduce legislation that really enshrines the human right to clean air. So, thinking about how the government can ensure that all children and all adults have a basic human right to breathe clean air in their homes, in their schools and in their communities more broadly.

I guess I can go a step further and say that I would also really like the government to publish new policy guidance on building resilience, to lower the risk of adverse health outcomes associated with ambient air pollution. And you know, creating an accessible version that can be used by the general public and by healthcare providers, too. We've created policy guidance before with the Equality and Human Rights Commission on a separate education-related topic. It was around Afro hair discrimination in schools and that guidance was used by and is still being used by education providers across the UK. And we ensured that it was also accessible for parents to read and for young people to read too, so that communities feel empowered to actually take tangible steps to protect themselves against the disproportionate exposure to pollution.

And lastly, I think I would really like to see the government launch a national inquiry into the disproportionate impact of air pollution. What many of us would like the government to do is to address how ethnic minority communities and low-income groups are affected. So, including an assessment of current clean air policies in deprived areas and constituencies that have a high proportion of people of colour. So, looking at current policies and plans, looking at things like low traffic neighbourhoods, and so on, and thinking about how we can ensure that these important nuances around race are included in policy mechanisms that address air pollution head on. How is the government thinking about disaggregated data? Are they using race equality risk assessments, for example, looking at how the policies that they're thinking about introducing or policies that have already been introduced. Looking at how they may have different impacts upon different minoritised communities or looking at how they may have different impacts upon low-income groups. I think it's really important to ensure that that important nuance is included within policymaking going forward.

And lastly, we'd really like to see the government create a robust strategy, to tackle race disparities in healthcare and improve training amongst healthcare providers to incorporate a clear plan of action to improve health outcomes for racialised groups as well, and that also relates to improving Black maternal health outcomes, which again, you know, a lot of Black mothers are disproportionately impacted by air pollution and about the adverse health outcomes that are associated with air pollution more broadly. So, I think, having that healthcare piece, thinking about strategies, thinking about tackling race disparities in healthcare and improving training amongst healthcare

providers is core to any plan that addresses a disproportionate impact of air pollution more broadly.

Tobias Rüttenauer

L'myah, I think that, I mean, the work that you're doing. That's amazing, right? I mean, I've just from listening to what like all the stuff you're doing, and all the effort you're putting in there. I think this is like amazing. And it's so important that someone actually pushes for this.

L'myah Sherae

Thank you. No, I really appreciate that. I think when you really look at the statistics in in more detail, you know the fact that nitrogen dioxide levels in ethnic minority communities are on average up to 27% higher than the least diverse constituencies. I think you really can comprehend how important this issue, this issue is. And we have so many statistics that highlight the disproportionate impact. So yes, hopefully, we can make a headway and push this government to make some tangible steps in the right direction.

Tobias Rüttenauer

I'll have my fingers crossed, that that works.

Chris Coates

Thank you Tobi and L'myah. That's all for this episode, you can find out more about how our data can change practice and inform policy by visiting our website understandingsociety.ac.uk, and by following us on social media. Thank you for listening and remember to subscribe wherever you get your podcasts.