

Demographic consequences of environment risks

Convenors: Risto Conte Keivabu, Dr. Jasmine Fledderjohann, Dr. Dermot Grenham, Tobias Rüttenauer

9.00am Tuesday 6 September: Demographic consequences of environment risks 1

The impact of heat and humidity on the prevalence of stillbirth in India

Payal Hathi; University of California Berkeley

Studies linking climactic exposures to health have shown adverse impacts on outcomes such as mortality and disease. However, the impact of heat stress on adverse pregnancy outcomes like stillbirth has remained understudied, particularly in low and middle-income countries (LMICs) where most of the world's stillbirths occur. In this study, I link Demographic and Health Survey data on the prevalence of stillbirth with location-specific temperatures in India, the country with the greatest number of stillbirths annually. Using both analysis of seasonality of stillbirth and regression analyses, I find that stillbirth prevalence in India is impacted not just by heat conditions alone, but importantly by the combined effects of heat and humidity. Given the sensitivity of stillbirth to climactic exposures, these findings demonstrate the preventability of stillbirth. They also suggest the urgent need to consider more carefully the effects of climate change on both maternal and child health.

Email: phathi@berkeley.edu

Climate change and fertility

Risto Conte Ceivabu¹, Marco Cozzani², Joshua Wilde³; ¹European University Institute, ²University of Bologna Institute, ³Max Planck Institute for Demographic Research

Climate change may affect future population dynamics. A growing body of evidence suggests that exposure to abnormally hot days reduces birthrates. However, the existing literature focuses either on countries with high levels of air conditioning (AC), or countries with very low incomes. Therefore, there is a noticeable gap in our understanding of the effect of temperatures in high-income countries with low AC penetration, where the effect of temperature shocks on fertility should be more pronounced. In this paper, we use administrative data for continental Spain from 2010 to 2016 to identify the causal effect of temperature on birthrates. We demonstrate that warm (25-30°C) and hot days (>30°C) decrease TFR in Spain, and that the estimated decrease is higher than the effects estimated in previous literature for the United States. Our results suggest that estimates of the global impact of climate change on population dynamics are understated, and that temperature increases may exacerbate population ageing in Europe and the social and economic problems of low fertility.

Email: risto.conte@eui.eu

Exposure to extreme weather events in the UK may affect environmental attitudes but does not change individual behaviour

Tobias Rüttenauer; Nuffield College, University of Oxford

Previous research has shown a link between extreme weather events and people's belief in climate change and their pro-environmental behaviour. This indicates that people may become more environmentally friendly amid increasing extreme weather events. Still, the influence of experiencing extreme weather events on actual behaviour has rarely been tested with large-scale individual-level panel data. This study links panel data from 35,678 individuals to floods across England and heatwaves across the UK, and applies within-person estimators to account for pre-existing differences between affected and unaffected individuals. Results reveal that individuals are more likely to believe in climate change after being affected by a geographically proximate flood or a temporally proximate heatwave. These effects are stronger among initially right-leaning partisans and those initially more sceptic about climate change, thereby indicating attitudinal updating due to experiential learning. However, those exposed to extreme weather events do not change their environmental behaviour such as energy saving, sustainable shopping or means of transportation. Even among those who change their beliefs, people's behaviour does not react to extreme weather events.

Email: tobias.ruttenauer@nuffield.ox.ac.uk

11.30pm Wednesday 7 September: Demographic consequences of environment risks 2

Unequal exposure to air pollution: A spatial analysis of Vienna

Ingrid Setz¹, Andreas Chmielowski², Lorenz Wimmer³, Meng Lu⁴, Victor Wegner Maus⁵; ¹Vienna Institute of Demography, Wittgenstein Centre (IIASA, OeAW, University of Vienna), ²University of Gothenburg, ³Institute for Advanced Studies, Vienna, ⁴University of Bayreuth, ⁵Vienna University of Economics and Business

Air pollution has a strong impact on the health and well-being of societies. According to the European Environment Agency, it represents the largest environmental health risk in Europe. For example, excessive exposure of nitrogen dioxide (NO₂) can lead to premature death due to cardiovascular and lung diseases. Yet, air pollution is neither homogeneously spread across space nor among population groups. A large body of literature shows that environmental inequality persists across socioeconomic groups, i.e. socioeconomic disadvantaged groups are likely to be more exposed to air pollution. In this study, we investigate the spatial relationship between nitrogen dioxide (NO₂) exposure and the migrant share at a high spatial resolution for Vienna, Austria. We overcome data limitations of previous studies by combining a novel model-based data set on NO₂ concentration and sociodemographic data from 2019 on a 250-square meter grid in a spatial autoregressive model, controlling for contributing factors. Our results confirm a significant positive correlation between air pollution and the proportion of migrants for different spatial aggregation levels and model specifications. The findings provide evidence on the presence of environmental inequality in intra-urban spaces and emphasize the need to reduce such inequalities.

Email: ingrid.setz@oeaw.ac.at

Environmental quality, local infrastructures, and residential choice: A survey experiment on ethnic differences in neighbourhood preferences

Jan Paul Heisig¹, Christian König¹, Tobias Rüttenauer², Merlin Schaeffer³, Jonas Wiedner¹;
¹Wissenschaftszentrum Berlin für Sozialforschung, ²University of Oxford, ³University of Copenhagen

Research shows that adults and children from immigrant-origin families tend to live in areas with lower environmental quality (e.g., higher levels of pollution) and that this can have substantial negative effects on their health and socio-economic attainment. Prior work relies on observational data and faces severe difficulties in disentangling the processes underlying this pattern of “environmental inequality”, which may include residential preferences, economic constraints, or other processes such as housing market discrimination. We carry out a conjoint survey experiment to zero in on the potential role of residential preferences and group-level differences in valuation of different housing and neighbourhood characteristics. We investigate whether minority groups attach differential importance to residential environmental quality and to what extent their residential choices are driven by preferences for ethnic networks and infrastructures, which – due to “legacy effects” of where immigrant minorities first settled - are often located in areas with comparatively low levels of environmental quality. The experimental treatment assignment in conjoint experiments allows us to tease these entangled mechanisms apart, thereby contributing to a clearer understanding of why immigrant-origin families end up in neighbourhoods that are harmful not only to their health but also to their life chances more broadly. Preliminary results suggest that migrants and their descendants equally value living in a clear neighbourhood environment and show a similar sensitivity to rental prices as compared to the majority population. There are, however, substantial and significant group-level differences with regard to ethnic neighbourhood composition, pointing towards “legacy effects” explaining persistent patterns of environmental quality along minority status.

Email: christian.koenig@wzb.eu

Do green issues matter? Environmental quality and neighbourhood choice

Ulf Liebe¹, Peter Preisendörfer²; ¹Department of Sociology, University of Warwick, ²Institute of Sociology, University of Mainz

Research on neighbourhood choice and residential mobility faces the challenge of disentangling the importance of environmental and other factors for individuals' and households' decision-making. We examine the relevance of unfavourable (road traffic noise) and favourable (access to green space) local environmental conditions for neighbourhood choice. Among others, we introduce the mere exposure effect hypothesis regarding environmental neighbourhood preferences and test the affluence hypothesis regarding willingness to pay for environmental neighbourhood attributes. We combine a stated choice experiment, willingness to pay questions, questions on mobility decisions and objective environmental data to investigate neighbourhood preferences and mobility decisions in four European cities (Bern and Zurich in Switzerland, Hanover and Mainz in Germany). The survey data comprise over 2,000 respondents and were collected between 2016 and 2018. In line with the mere exposure effect hypothesis, those who currently face a higher exposure to traffic noise express weaker preferences for neighbourhoods with lower noise levels than those who are currently less affected. Those who already have access to more green space in their vicinity place a higher value on green areas in the neighbourhood than those with less green space in their vicinity. Supporting the affluence hypothesis, respondents with higher income are willing to pay more for neighbourhoods with better environmental quality than those with less income. Both unfavourable and favourable local environmental conditions are highly relevant for neighbourhood choice, taking other neighbourhood characteristics into account. The mere exposure effect shapes preferences for local environmental conditions and should be considered in future research.

Email: ulf.liebe@warwick.ac.uk

The paradox of food security and development in Kashmir

Idreas Khandy; Lancaster University

The relation between food security and the political agency of individuals in the context of protracted conflicts is rarely highlighted in scholarship. The present paper seeks to fill this lacuna. To that end, this paper argues that the capacity of people in Kashmir (specifically Indian administered Kashmir) to resist and prevent the region's incorporation into the Union of India is directly connected and flows from the existence of a certain degree of material and food security. The antecedents of such security can be traced back to the land reforms undertaken by the first and the last nationalist government in the region in the early 1950s that led to a radical redistribution of land amongst the cultivators, imposed an upper ceiling on land ownership, and provided debt relief to the cultivators. In this context, the development agenda of the Indian state reveals itself as a proxy for assimilating and integrating Kashmir with the Union of India by fostering dependence of Kashmir on the Indian state by decimating the agrarian economy of Kashmir. Such an agenda is undertaken by alienating the people of Kashmir from their lands through various acquisition and dispossession (A&D) processes for the so-called developmental purposes, i.e., the construction of roads, hospitals, schools, and power stations, etc. The alienating processes carried out under the pretext of development and state security have an inverse relation with food security in the region as the volume of arable land progressively decreases. Finally, the growing food precarity, this paper argues, will have far-reaching consequences on the ability of Kashmiri to stake their claim in the political future of their state.

Email: i.khandy@lancaster.ac.uk