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Socioeconomic, lifestyle, and environmental determinants of life satisfaction in the United Kingdom

Mary Abed Al Ahad - University of St Andrews

Life satisfaction is an important measure of people's well-being and health, influenced by socioeconomic, environmental, and lifestyle factors shaping daily life. This paper investigates socioeconomic (e.g., ethnicity, marital status, number of children, income, occupation, sex, age, education, housing tenure), lifestyle (e.g., body mass index, exercise, alcohol consumption, eating habits, smoking), and environmental (e.g., air pollution, weather, urban-rural, access to green spaces) determinants of life satisfaction in the UK. We use the UK Household Longitudinal Study data for waves 1–10 (N = 75,891; 2009–2019) and apply ordinal multilevel mixed-effects modelling. Higher life satisfaction was associated with being married or in a couple, higher income satisfaction, retirement, having children, good physical and mental health, and being non-smokers. Income satisfaction was the strongest predictor. Ethnic minorities particularly Indian and mixed ethnic groups and individuals in management and professional occupations reported lower life satisfaction. Environmentally, exposure to NO₂ pollution above EU limits and higher temperatures were linked to lower life satisfaction, while rural residence, increased sunshine, and greater park availability related to higher satisfaction. Life satisfaction declined significantly over time, reaching its lowest point in 2019. Lifestyle factors, including physical activity and vegetable consumption, showed positive associations. These findings highlight that whilst socioeconomic and health factors remain dominant determinants, environmental quality and lifestyle behaviours provide complementary pathways to enhancing population well-being and life satisfaction, with implications for public health and urban planning.

Revisiting the climate-migration-conflict nexus: Community-level evidence and contextual pathways in coastal Bangladesh

Gazi Alif Laila, Jouni Paavola, Diana Ivanova, James D Ford - University of Leeds

The relationships between climate change, migration and conflict are increasingly drawing scholarly attention, yet empirical evidence from the community level remains limited. This research examines how climate change, migration and local conflict dynamics intersect in two climate-vulnerable regions of Bangladesh – Khulna City Corporation and Koyra Upazila. Using a mixed methods approach combining household surveys (N = 300), focus group discussions and key informant interviews, we explore how communities perceive and experience the climate-migration-conflict (C-M-C) nexus. Our findings indicate that migration alone does not generate conflicts: tensions emerge when migration intersects with poverty, fragile infrastructure and weak governance. By grounding theoretical debates in lived experiences, our research advances the understanding of the C-M-C nexus as a context dependent and indirect process. It contributes to the literature by identifying stratified nexus experience and concrete conflict mechanisms. The results highlight the need for inclusive urban planning, improved public services, and the alignment of climate change adaptation strategies with conflict sensitive governance.

Differential effects of temperature extremes on mortality in two European contexts: A long-run historical analysis

Dariya Ordanovich - Spanish National Research Council, Andrew Stevenson - University of Edinburgh, Diego Ramiro - Spanish National Research Council, Chris Dibben - University of Edinburgh

Background: The mortality impacts of ambient temperatures have been extensively documented across contemporary populations, yet evidence on the independent effect of prolonged thermal extremes -- heat and cold waves -- beyond temperature exposure per se is largely confined to recent decades. Whether such events carry an independent burden, and how this varies across historical periods and climatic contexts, remains an open question.

Objectives: This study examines whether heat and cold waves impose a mortality risk exceeding that attributable to daily temperature alone, across two European settings over a century of observation.

Data and Methods: We analysed daily meteorological and mortality records for Madrid, Spain, and Edinburgh and Glasgow, Scotland, extending from the 1880s onwards.

Temperature data were homogenised using Empirical Quantile Mapping. Thermal extremes were identified by two complementary approaches: an absolute-threshold method requiring simultaneous exceedance of dynamic percentile thresholds for daily maximum and minimum temperature, and a biometeorological Excess Heat/Cold Factor (EHF/ECF) framework capturing physiological acclimatisation stress from unseasonal events. Distributed lag non-linear models with quasi-Poisson specification were fitted across successive ~10-year periods, stratified by age and sex. Attributable fractions were decomposed into continuous temperature exposure and event-specific added effects.

Preliminary Results: EHF/ECF consistently yielded more epidemiologically coherent estimates than absolute thresholds. Continuous temperature exposure accounted for the dominant share of heat- and cold-attributable mortality; the added burden attributable to extreme event occurrence was small and frequently non-significant across periods and strata.

Applications: Findings inform climate adaptation policy and early-warning system design by clarifying the relative contribution of temperature intensity versus event duration to historical mortality risk.

Growing up in a warming world: Temperature and child health in India

Vinod Joseph Kannankeril Joseph - University of Bologna

This paper investigates the association between thermal stress and child health outcomes in India by linking individual-level data from the National Family Health Survey (2019–21) with high-resolution climate reanalysis data. The study examines the effects of multiple thermal indicators, 2 m temperature, mean radiant temperature, and Universal Thermal Climate Index on stunting, wasting, underweight, and concurrent stunting and wasting among children under five. Logistic regression models adjusted for socioeconomic and maternal characteristics indicate that the likelihood of acute undernutrition (wasting and underweight) increases significantly with higher heat exposure, particularly among socioeconomically disadvantaged households, whereas stunting levels decrease. The analysis identifies heterogeneity by sex, residence, maternal education, and access to electricity. The findings underscore the role of heat stress as a determinant of acute child malnutrition, particularly in socioeconomically disadvantaged populations. Integrating climate information into public health and nutrition programs is critical to safeguarding child growth and resilience in a warming climate.

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The influence of population shrinkage on per capita carbon emissions: Evidence from China

Zhaoyuan Fan - Nanjing University of Posts and Telecommunications & University of Oxford

Under the background of China's transition toward high-quality urbanization and concurrent population decline, urban shrinkage has become increasingly prominent. Population loss may reshape energy consumption and land use patterns, yet its impact on per capita carbon emissions remains unclear. Based on panel data from 285 Chinese cities from 2011 to 2023, this study employs Spatial Durbin Model and the mediation effect model to examine the impact of population shrinkage on per capita carbon emissions and its underlying mechanisms. The results show that, per capita carbon emissions exhibit a westward shift, while population shrinkage expands from a localized pattern to a more contiguous spatial distribution. Baseline results indicate that population shrinkage significantly increases local per capita carbon emissions, while generating significant negative spillover effects on neighboring regions through spatial linkages. Mechanism analysis further reveals that population shrinkage increases per capita carbon emissions by exacerbating fiscal pressure and reducing public investment in science and technology. Heterogeneity analysis shows that the positive effect of population shrinkage on carbon emissions is strongest in shrinking cities in Northeast and Central China. Resource-based cities and non-shrinking cities exhibit a pronounced negative siphon effect, the spatial spillover effect offset local direct effects, rendering the total effect statistically insignificant in resource-based cities, while the total effect in non-shrinking cities is significantly negative. These findings provide both theoretical insights and practical implications for implementing regionally differentiated low-carbon governance strategies and promoting coordinated development between population dynamics and environmental sustainability under the back ground of urban shrinkage.

When does pollution matter? Timing and the fertility effects of PM2.5 in Italy

Chiara Baldan - Sapienza University of Rome

This study examines whether and when exposure to fine particulate matter (PM2.5) affects fertility outcomes. While PM2.5 is known to harm cardiovascular, respiratory, and reproductive health, evidence on its impact on fertility at the population level remains limited. Italy provides a particularly relevant context, combining persistently low fertility with PM2.5 levels that often exceed WHO guidelines.

We analyse the relationship between PM2.5 exposure and the General Fertility Rate (GFR) using a municipality-by-month panel covering the period 2003–2020. To address the high prevalence of zero births in small municipalities, we implement a spatial aggregation procedure. PM2.5 exposure is measured as the number of days per month falling within PM2.5 concentration ranges defined by WHO thresholds.

To identify sensitive periods in the reproductive process, we estimate a distributed lag model capturing exposure across different biological windows, including pre-conception, conception, early pregnancy loss, and late fetal stages. The model includes municipality, month, and time fixed effects, as well as municipality-specific trends.

We find that higher PM2.5 exposure is associated with lower fertility, with effects emerging at levels above 15 $\mu\text{g}/\text{m}^3$ and concentrated around the pre-conception and conception periods. These associations are primarily driven by sustained pollution episodes (defined as at least five consecutive days above 25 $\mu\text{g}/\text{m}^3$) rather than short-lived peaks, suggesting that cumulative biological stress plays a key role.

Overall, our findings indicate that PM2.5 is related to reduced fertility levels even at concentrations that comply with current EU standards, highlighting the importance of considering demographic outcomes in air quality policy.

Climate change narratives and first birth in the UK

Ewa Weychert - University of Warsaw, Daniele Vignoli - University of Florence, Anna Matysiak - University of Warsaw

This study investigates how climate change news exposure relates to first-birth outcomes in the United Kingdom. Drawing on theories of imagined futures, individualized political engagement, and eco-anxiety, we examine whether and how exposure to climate-related media coverage is related to fertility behavior. We construct a novel index of climate change news volume using text mining and link it to individual-level longitudinal data from the UK Understanding Society survey. Results show that high exposure to climate change news is associated with a lower probability of first birth, but only among individuals who express strong pro-environmental attitudes. In contrast, political identity and perceived long-term climate risk do not significantly moderate this relationship. These findings suggest that climate narratives are associated with fertility not uniformly, but through moral and emotional mechanisms tied to current environmental concern. This study highlights the role of media-driven imaginaries in shaping life course decisions and contributes new evidence on the demographic implications of climate change discourse.