



SCHOOL OF BUSINESS RESEARCH SEMINAR SERIES

RESEARCH WITH IMPACT

Future Design for Public Health: Evidence from Rural Bangladesh

PRESENTER:

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DATE: Friday 29 August 2025

TIME: 10:00am – 11:00am

MEETING DETAILS: Learning Studio 78 Level 7, IPSQ
& Zoom Online (Meeting ID: 818 7019 3174,
Password: 323402)

RSVP: COB, Friday 22 August 2025

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ABSTRACT:

Burning of solid fuels such as firewood, crop waste, and livestock dung for cooking and heating causes indoor air pollution, especially in poor households, which leads to respiratory illnesses and premature death. However, little is known about what triggers households to persistently improve indoor air quality. Figure 1 shows the overall indoor air pollution condition during cooking inside households. This research considers a future design (FD) approach for the possible trigger where people are asked to think of a problem and take actions through taking a perspective of future generations. We investigate the question “how does the FD approach impact on the indoor air quality (IAQ)?” and the hypothesis “FD induces people to make a persistent improvement to IAQ.” We employ a double-round experiment with two treatments of baseline, and FD, collecting IAQ information on air pollution level, $P M_{2.5}$, $P M_1$ and $P M_{10}$ at home and kitchen with 200 households in Bangladesh over 135 days. In baseline, households’ report the IAQ information. In FD, they additionally think a vision, a mission and a strategy for the IAQ. They take each perspective of past,

current and future generations and then deliberate to think of the same issue. We conducted social experiments in Bangladesh to collect the indoor air pollution information. The households were selected by following the stratified random sampling techniques. Questionnaire surveys and social experiments were conducted with the households to collect necessary information regarding their socio-demographic variables and indoor air pollution conditions. To estimate the average treatment effects on the treated (ATT), we apply a difference-in-difference (DID) method with multiple time periods. The result indicates that FD affects people to have a sustained decrease in air pollution level, $P M_{2.5}$, $P M_{10}$ and $P M_{10}$ at home and kitchen as compared to baseline treatment. The novel aspects of this study is to consider the perspective taking of future generations for analyzing households indoor air pollution reduction by conducting multiple rounds of social experiments. Overall, FD demonstrates a great potential for inducing people to make a persistent improvement to IAQ.

Moinul Islam, Khatun Mst. Asma, Tatsuyoshi Saijo and Koji Kotani



Figure 1: Indoor cooking and air pollution

BIOGRAPHY:

Dr. Moinul Islam is an economist whose work lies at the intersection of environmental economics, sustainability science, and public policy. He serves as an Associate Professor at both the School of Economics and Management and the Research Institute for Future Design at Kochi University of Technology (KUT), Japan. His research addresses global challenges such as climate change, sustainable development, and environmental policy through data-driven approaches. His interests include agricultural economics, ecological economics, public policy design, and climate risk adaptation. Dr. Islam integrates field, laboratory, and survey experiments with advanced econometric modelling, employing cross-sectional, panel, spatial, and time-series datasets to evaluate the effectiveness of environmental and economic policies. He has published 36 peer-reviewed journal articles, and seven book chapters, with over 1,400 citations to date. Through interdisciplinary collaboration and active stakeholder engagement, Dr. Islam seeks to bridge the gap between academic research and practical policymaking. By generating actionable insights, his work contributes to national and global efforts to build resilient and sustainable societies.