Demand analysis & policy evaluation using scanner data

RESEARCH PROGRAM

Objectives

The activities for this project are functional to the Horizon2020 project COMFOCUS ("Communities on Food Consumer Science"), funded by the European Commission (Grant Agreement No. 101005259) which started in March 2021, and to the Joint Funding Action PEN ("Effectiveness of existing policies for lifestyle interventions – Policy Evaluation Network"), funded by the Ministry of Higher Education and Reseach (MIUR) within the framework of the Joint Programming Initiative "A Healthy Diet for a Healthy Life" (HDHL), which started in February 2019 and will be completed in 2022. The successful candidate will contribute to the review, implementation and development of quantitative methods aimed at modelling individual consumer choices and aggregate demand (including behavioral response to lockdowns during the Covid-19 pandemic), and the evaluation of consumer-targeted policies, using scanner data, and more specifically homescan data.

Project Background

The research program is related to the activities of two research projects, COMFOCUS and PEN. The **COMFOCUS** project started on 1st March 2021, and is a H2020 "infrastructure" project (INFRAIA-02-2020 Integrating Activities for Starting Communities), whose aim is to integrate on European scale national and regional research infrastructures in the inherently interdisciplinary field of food consumer science. As a library of meta data and digital service tools, the COMFOCUS Knowledge platform is being developed as an easily accessible focal point for all European researchers to make this happen within the principles of FAIR and Responsible Research & Innovation (RRI) data use. COMFOCUS achieves this through a coordinated set of activities on networking, joint research and transnational and virtual access to key research infrastructures. Joint research activities develop the harmonisation protocols for measurement and research procedures both in the area of conventional self-reported data and more objective emerging food consumer science methodologies.

The Policy Evaluation Network PEN started on 1 February 2019 and is a

joint action aimed at establishing a multi-disciplinary European research network for the monitoring, benchmarking and evaluation of policies that affect lifestyles with a standardized approach across Europe.

PEN is a multi-disciplinary consortium of scientists from 28 research centres, supported by joint programming grants from Germany, Ireland, Italy, The Netherlands, Norway, Poland and France, plus a non-EC team from New Zealand. To address the major societal challenges and enhance cooperation in research across Europe, the European Commission has initiated and facilitated 'joint programming'. This joint programming is a process by which Member States engage in defining, developing and implementing a common strategic research agenda, based on a shared vision of how to address major societal challenges that no Member State is capable of resolving independently.

PEN's vision is to provide Europe with tools to identify, evaluate and benchmark policies designed to directly or indirectly address physical inactivity, unhealthy diets and sedentary behaviour while accounting for existing health inequities. Using structured evaluation principles and methods, PEN will examine the content, implementation and impact of lifestyle policies across Europe and will build on existing knowledge from DEDIPAC (Determinants of Diet and Physical Activity) and the INFORMAS (International Network for Food and Obesity/ non-communicable diseases Research, Monitoring and Action Support) framework.

Description of work

Within the two projects, the unit of the Department of Statistical Sciences of the University of Bologna (UNIBO) has specific responsibilities. Within the COMFOCUS project, the UNIBO team will lead Task 6.5 ("Harmonising longitudinal consumer data"), whose aim is to harmonize methods and build protocols to integrate different types and sources of longitudinal consumer data. A specific focus will be on the longitudinal/panel dimension of scanner data (both retail-level and homescan data). Within the PEN project, the unit of the Department of Statistical Sciences of the University of Bologna (UNIBO) us the Italian national co-ordinator within a consortium that also involves researchers from the Catholic University of Piacenza. The UNIBO team also coordinates Workpackage 3 on the **Estimation and simulation of policy impact**, a methodological workpackage aimed at review, critically assess and refine quantitative methods for the evaluation of the impact of public policies targeting diet, PA and/ or SB across Europe.

The envisaged activities provide methodological support for and contribute to the policy evaluation of existing case studies. The guiding frameworks employed in this WP are mostly statistical in nature, as they are specific to causal inference, health economics/econometrics and epidemiology/ public health.

The key activities in this project will be completed in February 2022, and are currently ongoing. Within this project, the UNIBO team has acquired a large homescan data-set monitoring daily drink purchases of more than 9,000 Italian households in 2019 and 2020, as well as repeated cross-sections and longitudinal data from the INE Spanish Household Budget Surveys. These data are used to: (a) estimate the impact of the Catalunya sugar-sweetened beverages tax; (b) project the potential impact of the Italian soda tax, which should be introduced on 1st January 2022.

The grant will be initially for one year, but may be renewed.

The successful candidate will be part of the research team of the University of Bologna involving members of the Department of Statistical Sciences and contribute to the activities of the COMFOCUS and PEN projects, more specifically the COMFOCUS activities within WP4 and WP6, and the PEN activities within WP3 and WP6.

The successful candidate is expected to:

- Support the management of large data-sets based on scanner technologies, including administrative tasks related to data protection;

- Contribute to the modelling of scanner data for demand analysis, and more specifically to the specification and estimation of Discrete Choice demand models and the EASI demand system;

- Contribute to the modelling of scanner data for policy evaluation using quasi-experimental methods, and more specifically to the estimation of Difference-in-difference models with panel data, synthetic control methods, and regression discontinuity designs (including potential combinations between methods);

- Support the team in writing and finalizing project deliverables and research reports;

- Explore/write STATA routines;

- Participate to project meetings

- Contribute to the project administration

GRANT OBJECTIVES, TRAINING AND RESEARCH PLAN

The grant is for 12 months, with a starting date between October and December 2021, and may be renewed after the first year.

Requisites for candidates

The successful candidate should:

a. Master oral and written English language

b. Have previous experience in international research projects

c. Have a solid statistical training, with experience on the application to food economics/food consumption issues

d. Have a good knowledge of statistical software and coding, preferably Stata and/or R

e. Have a good knowledge of LaTex language for writing scientific reports and articles

Grant objectives

The specific objective of the training programme is to acquire advanced skills on the modelling of longitudinal consumer data for demand analysis and policy evaluation.

Training

The successful candidate will be trained in the following activities:

1. Manage and pre-process large scanner data-sets for subsequent statistical analysis

2. Run statistical analyses using Stata, including writing ad-hoc commands

3. Write scientific reports and papers

Training will include:

1. Supervision and guidance by members of the UNIBO research team

2. Attendance of short courses on quantitative methods relevant to the project objectives, for example trainings and workshop organized by CEMMAP in London, and/or training activities organized within the framework of the PEN project ("Early Career Researcher Network") and transnational activities within the COMFOCUS project.

3. The opportunity to spend study/research periods at other PEN and COMFOCUS institutions and other institutions with a focus on demand analysis

Expected outputs

At the end of the first year, the grant holder should have produced at least one working paper ready for submission on a topic relevant to the project.

Timeline of the research plan

Months 1-3: Empirical studies within the PEN project: (a) contribution to the simulation model for the Italian SSB tax; (b) support to the completion of the evaluation study for the Catalunya soda tax. This also involves support to writing reports and deliverables, and any other activity under completion within the project;
Months 4-8: Simulation and studies using scanner data, comparison between Mixed Logit discrete choice models and the BLP model;
Months 9-12: writing working papers and reports about the use of longitudinal (scanner) data to analyze consumer behaviour, within the framework of the COMFOCUS project

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