

Project title: SOEP-RegioHub@UniBielefeld: Studying Regional Development Dynamics and their Political Consequences

Project number: W42/2019

Executive Summary

The SOEP-RegioHub@UniBielefeld (<https://isc-soep-regiohub.com/>) aimed to establish a sustainable research infrastructure for the analysis of regional social and economic dynamics and their political and societal consequences. As a joint initiative between the German Socio-Economic Panel (SOEP) at DIW Berlin and Bielefeld University, the project successfully enhanced the possibilities to link longitudinal household survey data with a wide range of regional indicators, thereby enabling innovative research on spatial inequality and its impact on individual outcomes.

The central objectives of the first phase were building a data infrastructure, promoting interdisciplinary collaboration, fostering early-career researchers, and facilitating the use of sensitive regionalized survey data in teaching and research and were fully achieved. Key milestones included the implementation of the data infrastructure, close cooperation with data-providing institutions and the organization of major scientific events. Selected components of the infrastructure were made publicly available via GitHub to enhance transparency and reusability.

The project produced a range of scientific outputs, including more than thirty peer-reviewed publications across economics, sociology, public health, and political science. Two special journal issues are highlighting the interdisciplinary approach of the Campus. Beyond academic publishing, transfer to the broader public was supported through contributions to the *DIW Wochenbericht* and the development of open digital tools, such as the SOEP RegioHub DataExplorer and several R packages that facilitate the use of regional data.

The collaborative structure of the Campus proved highly effective. Despite pandemic-related challenges, such as delays in recruitment and hardware delivery, all planned activities were implemented successfully. The Scientific Advisory Board provided independent strategic guidance, while the Technical Advisory Board ensured the technical feasibility of infrastructure elements.

Strong emphasis was placed on equal opportunities and career development. Five of the eight doctoral researchers were women, and mentoring, colloquia, and specialized training workshops supported early-career advancement. Special funds enabled participation in international conferences and research visits.

The outcomes of the first phase underline the scientific value of analysing regional contexts to better understand social and economic processes in Germany. The increasing demand for regionalized survey data demonstrates the continued relevance of this research field.

Building on these achievements, the second phase of SOEP-RegioHub will expand both the infrastructure and research activities. Central elements include the development of a secure remote access system for regionalized SOEP data and the launch of the SOEP-RegioPortal as a central entry point for accessing, analysing, and combining regional and survey data. Four interconnected projects will address key topics: neighbourhood effects on health and infrastructure access; regional labour markets and mobility; socio-economic and political legacies of local history; and the influence of regional media climates on political behaviour.

Together, these activities will further strengthen the analytical, methodological, and infrastructural foundations of the SOEP-RegioHub, establishing it as a central national hub for research on regional development and its social, economic, and political consequences.

1. Achievement of objectives and milestones

The overall objectives of the SOEP-RegioHub were fully achieved during the funding period. The central goals of the Campus included the **establishment of a sustainable research data infrastructure** to enable the linking of SOEP survey data with a broad set of regional indicators, the **promotion of interdisciplinary collaboration**, the **training and support of early-career researchers**, and the **integration of sensitive regionalized survey data into teaching and research activities**.

Major milestones were successfully implemented as planned. A core outcome of the first phase was the **successful implementation of the data infrastructure**, which provides the technical and organizational foundation for linking SOEP data with regional indicators (for example direct access to regionalized SOEP data from Bielefeld). While the complete infrastructure itself is operated internally within the partner institutions, **selected components and tools have been made publicly available** through the [project's GitHub repository](#), ensuring transparency and facilitating reuse of non-sensitive elements. A central, **professional website** for the Leibniz-ScienceCampus was developed and informs about the projects and activities: <https://lsc-soep-regiohub.com/>.

Close **collaborations with data-providing institutions** (including IT.NRW, BBSR, Destatis, and the Bertelsmann Stiftung) enabled the integration of valuable new data sources for regional research. The project also organized several **scientific events** to strengthen exchange within the research community, including a large kick-off networking conference at the beginning of the Campus and a joint conference with BTU Cottbus and BBSR focusing on the substantive research topics of the SOEP-RegioHub.

In addition to numerous journal publications, two **special issues** were prepared to disseminate the project's findings: one published in [Social Sciences](#), and another forthcoming in the *Review of Regional Research* titled "*Spatial Contexts and Survey Data: Applications, Challenges, and Opportunities in Regional Science*."

All project objectives were achieved. However, **the COVID-19 pandemic and delivery delays for hardware components** caused minor postponements in the operationalization of infrastructure elements that depended on server hardware. Regarding the qualification track, two PhD researchers transitioned to non-academic employment positions, while three doctoral candidates successfully completed their dissertations shortly after the end of the first project phase.

From a financial perspective, the project was implemented largely as planned, with only **minor shifts between budget categories due to pandemic-related delays**.

2. Activities and obstacles

During the funding period, the SOEP-RegioHub focused on establishing a sustainable research infrastructure and conducting joint empirical research on regional social and economic dynamics. Continuous exchange with external partners such as IT.NRW, BBSR, Destatis, and the Bertelsmann Stiftung supported data integration and ensured the practical relevance of the developed infrastructure.

Core activities included the implementation of the data infrastructure, the integration of new regional indicators, and the development of tools and documentation facilitating the use of regionalized SOEP data. Early-career researchers were actively involved in all project stages, contributing to data preparation, analysis, and publications. In addition, several scientific events fostered interdisciplinary exchange and strengthened the visibility of the Campus.

Some challenges emerged during implementation. The COVID-19 pandemic required a temporary shift to online formats and led to delays in the recruitment of doctoral researchers. Hardware delivery delays further postponed parts of the infrastructure setup. Moreover, the handling of sensitive geocoded data necessitated extensive internal coordination to ensure full compliance with data protection regulations.

During the project period, several advances in the research area became apparent. The increasing demand for regionalized survey data, especially in the context of the COVID-19

pandemic, highlighted the scientific relevance of linking longitudinal household data with external regional indicators. The availability of additional geocoded datasets further informed the work of the Campus, improving both analytical approaches and infrastructure design. Overall, all planned activities were completed successfully. The work undertaken was necessary and appropriate to achieve the project's objectives, providing a robust foundation for both empirical research and future methodological innovations in the analysis of regional social and economic dynamics.

3. Results and successes

The SOEP-RegioHub achieved substantial scientific and infrastructural results during the funding period. The project successfully combined research on regional social and economic dynamics with the development of new data infrastructures and software tools for the broader scientific community.

Research within the Campus led to an extensive list of scientific publications in national and international journals across economics, sociology, public health, and political science. More than thirty peer-reviewed papers were published, including contributions in *Economic Modelling*, *Labour Economics*, *Journal of Economic Behavior and Organization*, *Journal of Economic Geography*, *European Sociological Review*, *Frontiers in Public Health*, and *BMJ Global Health*. Two *special issues* were prepared to highlight the Campus's integrative approach to combining survey and spatial data: one in *Social Sciences* and another (forthcoming) in the *Review of Regional Research* on "*Spatial Contexts and Survey Data: Applications, Challenges, and Opportunities in Regional Science*." The publications demonstrate both the interdisciplinary scope and the methodological advances achieved within the Campus.

Throughout the funding period, the Campus organized and participated in numerous scientific events, including conferences, workshops, and colloquia. These activities served to disseminate results, foster collaboration, and strengthen ties within the national and international research community. Highlights included a large networking conference at the outset of the Campus and a joint thematic conference with BTU Cottbus and BBSR, which brought together researchers from economics, regional science, and sociology. Regular research colloquia and summer schools provided a platform for early-career researchers to present ongoing work and receive feedback from peers and senior scholars. Moreover, Campus researchers successfully presented their work on large international conferences, including the European Association of Labour Economists, European Economic Association, Regional Science Association and others.

Beyond publications, the SOEP-RegioHub produced several open-source tools and digital products that enable broader use of regional data in research and teaching. These include the SOEP RegioHub DataExplorer, a web application for interactive data exploration, and several R packages that enhance data access and usability:

- **{nutscoder}**, for assigning NUTS region codes using OpenStreetMap data;
- **{inkr}**, for automated access to regional indicators from INKAR;
- **{deairdata}**, providing an interface to air-quality data from the German Environment Agency (UBA).

As an additional transfer measure, the Campus also utilized the DIW Wochenbericht to communicate research findings to a broader audience and to disseminate results within and beyond academia.

In summary, the SOEP-RegioHub not only met but exceeded its research and infrastructure objectives. It produced a high volume of quality publications, strengthened interdisciplinary collaboration, and created tangible tools that will continue to support regional and social science research in Germany and internationally.

4. Equal opportunities, career development and internationalisation

Ensuring equal opportunities and supporting early-career researchers were central objectives of the SOEP-RegioHub throughout the funding period. Recruitment and staff development followed transparent and merit-based procedures, with a strong commitment to gender equality and diversity. Among the eight doctoral researchers employed within the Campus, **five were female**, reflecting the project's success in promoting gender balance in academic recruitment. The Campus provided a broad range of structured measures to promote the careers of young researchers and to strengthen their academic skills. Regular **research colloquia at Bielefeld University** and **Brown Bag seminars at the SOEP** offered opportunities for doctoral and postdoctoral researchers to present their work, receive feedback, and foster interdisciplinary exchange.

To further enhance methodological expertise, **training workshops on advanced quantitative methods, spatial analysis, and the use of regionalized SOEP data** were jointly organized by SOEP and Bielefeld University experts. Moreover, several guest scientists, invited by the Campus PI's, offered block courses on advanced empirical methods in Bielefeld (e.g. Michael Stops, IAB Nuremberg and Michelle Battisti, Glasgow University).

Early-career researchers were also supported through **special mobility and travel funds**, enabling participation in international conferences, summer schools, and research stays abroad (for example, a research stay at the Adam Smith Business School, University of Glasgow, UK). These measures substantially contributed to the international visibility of the young researchers and strengthened their professional networks.

5. Structures and collaboration

The SOEP-RegioHub was jointly implemented by the DIW Berlin (SOEP) and Bielefeld University, combining expertise in regional research, survey methodology, and data infrastructure development. Collaboration was structured around the several subprojects under the coordination of the Directorate, which included all principal investigators. Regular Directorate meetings were introduced to ensure continuous coordination, strategic planning, and exchange among all project leaders.

Due to the COVID-19 pandemic, most meetings had to be shifted to online formats during the initial phase of the project. This led to some delays in the overall start of the ScienceCampus, particularly in the recruitment of PhD students and the establishment of initial joint research activities.

In 2022, a change in project governance occurred when the then Director of SOEP moved to Freie Universität Berlin. **Jan Goebel** subsequently assumed the role of **Speaker of the ScienceCampus**, ensuring continuity in leadership and communication between the partner institutions.

The LSC projects are collaborating with several external researchers and research groups, especially the collaborations with external data-providing institutions such as **IT.NRW**, **Destatis**, **BBSR**, **DeZIM**, and the **Bertelsmann Stiftung** proved highly beneficial for all subprojects. These partnerships enabled the acquisition and integration of new regional data sources, which have since been made available for secondary use. An example concrete outcome of this collaboration was the development of an [R package](#) **facilitating the use of numerous INKAR indicators** directly within R, thereby supporting broader data accessibility and reproducibility even within secure rooms without internet access for the researchers.

Overall, the established collaborative structures and partnerships significantly contributed to the successful implementation of the SOEP-RegioHub and created a foundation for continued cooperation beyond the funding period.

6. Quality assurance

The SOEP-RegioHub was accompanied throughout its funding period by a **Scientific Advisory Board (SAB)** and a **Technical Advisory Board (TAB)** to ensure adherence to high scientific and technical standards. The SAB provided independent expertise and strategic advice on the scientific direction of the project. The board consisted of Dr. Gundi Knies (Thünen-Institut, Germany), Prof. Dr. Rüdiger Schmitt-Beck (Universität Mannheim, Germany) and Prof. David Brady, PhD (University of California, USA).

Regular meetings of the Scientific Advisory Board took place to review progress and provide recommendations regarding research design, coordination between subprojects, and dissemination strategies. The Technical Advisory Board met on a regular basis to monitor the implementation of all planned infrastructure components and to ensure that the project's technical objectives were achieved as intended.

To guarantee that the developed infrastructures were implemented in a **user-oriented** and **research-supportive** manner, continuous exchange was maintained between Subproject 4 (Infrastructure and Data Services) and the other subprojects. This ensured that the data infrastructure and tools met the requirements of the scientific user community.

All project activities complied with the principles of **good scientific practice**. **No animal testing** was conducted. Most **project publications were published open access**, thereby ensuring transparency, accessibility, and long-term usability of the project's research results.

7. Additional resources

The LSC provides human resources for four PhD students, to establish and maintain the research data infrastructure and to offer supporting scientific expertise as well as hardware and software. These co-financed costs actually include 1) € 418,315 personnel costs and € 40,000 server costs (SOEP) and € 1,156,054 personnel costs and € 100,000 server costs (Bielefeld University).

8. Outlook

The results of the first phase of the SOEP-RegioHub have clearly demonstrated the scientific potential and relevance of analyzing social and economic dynamics at the regional level to better understand structural developments and individual outcomes in areas such as health, the economy, and political behavior. By combining longitudinal household survey data from the SOEP with a wide range of external regional indicators, the project established a unique and sustainable research infrastructure that enables innovative analytical approaches. The increasing scientific demand for regionalized survey data, particularly visible during the COVID-19 pandemic, underlines the importance of continuing and expanding this line of research.

Building on the achievements of the first phase, the next phase of the SOEP-RegioHub will further advance the successful integration of substantive research and research infrastructure development. The overarching goal is to deepen and extend the understanding of complex interrelations between regional disparities and their social, economic, and political consequences. The research infrastructure will be expanded and improved, simplifying its integration within the Campus and encouraging the broader use of regionalized SOEP data by external researchers, including international users.

A central element of this continuation is the planned development of a **remote access system** for regionalized SOEP data. This system will enable secure and efficient data access, thereby strengthening both the usability and international reach of the infrastructure. Furthermore, the **SOEP-RegioPortal** will be launched as a central entry point for accessing and analyzing regionalized SOEP data. The portal will not only facilitate the use of SOEP-

based data but also serve as a hub for best practices in combining geocoded data and survey data more broadly.

The second phase of the SOEP-RegioHub will comprise four interconnected research projects that exemplify the close link between substantial research and infrastructure development:

- **Project 1:** *Demographic Fabric at Small-Area Scale – The Impact of Neighborhood Compositions on Health Status and Infrastructure Access*
- **Project 2:** *Regional Economic Development, Job Search, and Spatial Worker Mobility*
- **Project 3:** *Socio-Economic and Political Legacies – How Local History Affects Individuals at Present*
- **Project 4:** *Local Media Climate – How Regional Off- and Online Media Shape Political Attitudes and Behavior*

Together, these projects will strengthen the analytical, methodological, and infrastructural foundation of the SOEP-RegioHub, transforming it into a central national hub for research on regional development and its social and political consequences.