Smart Data Research UK

UK Research and Innovation

Discover Smart Data Research UK

Welcome

Smart Data Research UK (SDR UK) is the UK's national programme for smart data research, backed by a £60 million UK Research and Innovation (UKRI) investment.

Our mission is to unlock the power of smart data for research to help solve today's most pressing social and economic challenges.

What is smart data?

Smart data is generated whenever we engage with the digital world — whether shopping online, using social media or getting directions. When used responsibly for scientific research, this data can transform our understanding of complex social challenges.

Our challenge and solution

Researchers have struggled to access smart data due to insufficient infrastructure, underdeveloped methods, and fragmented ethical and legal approaches. SDR UK addresses these barriers by providing safe, secure data access through:

- Developing long-term partnerships with data owners
- Providing secure data infrastructure
- Building public trust through responsible research and citizen engagement
- Supporting the next generation of smart data researchers

Delivered by

UKRI Economic and Social Research Council

Part of the UKRI Infrastructure Fund.

What we can offer

Researchers

We help researchers access and use smart data safely to understand the way we live and address broader social, economic and environmental challenges:

- Access to open, safeguarded and secure datasets
- De-identified granular and aggregated data
- Training and expert help
- Funding opportunities to support innovative research aimed at significant social and economic challenges

Policymakers and practitioners

At national and local levels, smart data insights can help to develop more precise, responsive, and impactful policy and delivery interventions:

- Evidence-based insights into complex societal challenges
- Objective analysis of intervention effectiveness
- Research that reveals connections between different aspects of social and economic wellbeing
- Highest standards of data privacy and ethical research, allowing confident and responsible policy development
- Collaborate with leading research institutions and emerging talent

Data partners

Organisations can amplify their social impact by enabling research that addresses critical challenges and drives positive change:

- Maximise the societal value of your data
- Contribute to groundbreaking research with real-world impact
- Support evidence-based policy development
- Collaborate with leading research institutions and emerging talent
- Promote responsible and ethical data-sharing
- Advance understanding of critical social and economic challenges

The public

Public trust and understanding are fundamental to responsible data research. We're committed to ensuring that our work reflects the concerns, insights, and aspirations of the communities we serve:

- Involving the public in shaping how data is used for good through public dialogue and other channels
- Ensuring smart data research delivers genuine public benefit
- Establishing clear, robust data governance frameworks
- Developing accessible ways to explain our work
- Maintaining the highest standards of data protection and ethics

Stay informed: Subscribe to our newsletter for news and opportunities **sdruk.ukri.org**

Research themes

Our work focuses on four interconnected priority areas

Productivity and prosperity

Smart data can help us understand what drives growth and innovation. It helps us to plan infrastructure for communities across the UK and tackle inequalities.

Health and wellbeing

Smart data can provide insights to improve population health and tackle inequalities. It can help us understand the drivers of the mental health crisis, and how we might live longer, healthier lives.

Digital society

Smart data can provide insights about online safety, misinformation, the digital divide and the future of work.

Sustainability

Smart data can help tackle issues such as decarbonisation, green growth and the transition to a sustainable future.

Data services

SDR UK is delivered by a family of data services based at leading UK universities and research organisations.

Each service acquires, stewards, and enables safe access to diverse smart data within secure environments that protect privacy while enabling breakthrough research.

A coordinated network of data services

Financial Data Service

Mission

Providing unprecedented insights into the UK's economic health through secure access to de-identified banking and finance data from millions of customers.

By partnering with financial institutions, such as NatWest Group and Virgin Money, and leading research institutes, the Financial Data Service (FINDS) offers researchers access to detailed evidence about financial behaviours, economic resilience, and regional economic activity.

The service will transform our understanding of the economy, for example, the effects of economic shocks or targeted policy interventions on different communities. Its data will enable researchers and policymakers to tackle urgent challenges such as child poverty, the cost-of-living crisis and financial inclusion.

Data focus

- Secure access to near real-time, de-identified banking data from 5.3 million UK customers
- Transaction records from thousands of Small and Medium-size Enterprises (SMEs)
- Geographically representative financial behaviour patterns across diverse demographics
- Capability to link financial data with other domains (e.g. health) for cross-sector analysis
- Curated datasets on financial behaviours, income variability, and business productivity

Financial Data Service

What's coming

- Better regional representation for insights into local economic challenges
- Advanced data linkage with non-financial sources for multidisciplinary research
- New analytical tools for tracking economic resilience and policy impacts

Team

The Financial Data Service is a collaboration between the University of Edinburgh and Smart Data Foundry.

Revealing the real impact of income volatility

The Income Volatility Dashboard offers researchers, charities and policymakers up-to-date information about money problems affecting millions of UK residents. Things like rising bills, unpredictable wages, and debt. The Joseph Rowntree Foundation uses this tool to show how unpredictable income and expenses affect different groups of people, helping them push for new policies to support those who struggle to recover from money troubles.

> *Financial data is a powerful force for change, unlocking insights into the real economic realities of UK citizens and helping us to drive better solutions to our most pressing social challenges."*
>
> **Magdalena Getler**
> Head of Research Growth, Smart Data Foundry

Geographic Data Service

Mission

Connecting different types of data through geography to study important social issues, including vulnerable populations, regional inequalities, and access to opportunities.

The Geographic Data Service (GeoDS) is the UK's leading source of linked and georeferenced smart data, drawing on more than a decade of success in delivering new insights into equitable and sustainable growth in the UK as part of the Consumer Data Research Centre.

Geographic integration reveals complex patterns through spatial analysis. Applying these techniques scientifically and ethically to smart data generates new insights into the differing circumstances of populations, guiding targeted strategies to enhance economic and environmental outcomes.

Data focus

- Linked and georeferenced national smart data integrating demographics, retail, image, financial, and transport sources
- Comprehensive data partnerships with companies and organisations across sectors
- Combined smart data and statistical sources for enhanced geographic insights
- Detailed mapping of socioeconomic patterns across different UK regions

Geographic Data Service

What's coming

- Nationwide smart data coverage in standardised, research-ready formats
- User-friendly data visualisation and mapping platform for researchers and policymakers
- Advanced analytics focusing on at-risk populations and regional disparities
- Masters Dissertation Scheme connecting students with industry partners

Team

The Geographic Data Service is led by UCL and the University of Liverpool, alongside the Oxford Saïd Business School and the University of Edinburgh.

Population insights for better planning

The Greater London authority (GLA) partnered with GeoDS to build a classification system called the London Output Area Classification (LOAC). It captures the distinctive population characteristics of London's residents.

LOAC has helped the Authority to pinpoint areas that were rapidly becoming more densely populated, allowing it to strategically plan for public services such as the number of school places needed.

> *Geography is the glue that holds together communities, economies and transport systems. We're excited about maximising the diverse range of interconnected smart data for national benefit."*

Professor Paul Longley
Director of the Geographic Data Service

Healthy and Sustainable Places Data Service

Mission

Addressing some of the most persistent and pressing challenges affecting health and sustainability in the UK by building access to data that has historically been beyond the reach of the research community and policymakers.

The Healthy and Sustainable Places Data Service (HASP) represents a groundbreaking approach to understanding and improving our communities.

HASP will produce new ways of using smart data to understand food, lifestyle and mobility patterns and behaviours.

The team will build upon ten years of expertise gained via the Consumer Data Research Centre.

Data focus

- Store loyalty cards and purchase records
- Health tracking data from fitness devices and wearable technology
- Transportation patterns from in-car technology and mobility service providers
- Local infrastructure and service accessibility information

Healthy and Sustainable Places

What's coming

- Research-ready data products capturing lifestyle, food, and mobility behaviour
- Integrated open data resources complementing curated datasets
- Interactive visualisations and dashboards highlighting community health patterns
- Analytical tools for identifying sustainability challenges and intervention opportunities

Team

The Healthy and Sustainable Places Data Service is led by the University of Leeds.

Targeting support where it's most needed

The Priority Places for Food Index combines multiple data sources to identify neighbourhoods across the UK that are most in need of support to access affordable and healthy food. Developed as a collaboration between the Consumer Data Research Centre and Which?, the tool makes it easy for policymakers and the food industry to identify priority places for support and understand the factors driving the need in each area.

> *Bringing together smart data and more traditional data for places has delivered real-world impact to communities most in need of support accessing affordable, nutritious food. We are delighted to be able to facilitate and deliver more of this sort of research through HASP."*
>
> **Professor Michelle Morris**
> Deputy Director, Healthy and Sustainable Places Data Service

Imago
Data Service for Imagery

Mission

Unlocking the potential of satellite imagery to provide a richer understanding of urgent challenges facing the UK.

Imago is a data service that transforms the utility of satellite imagery to revolutionise thinking around issues such as environmental vulnerability, urban development, housing, health and wellbeing.

Imago will achieve this goal by translating complex imagery data into data products researchers and policymakers require, delivering them through intuitive and user-friendly interfaces. The team will grow capacity for using imagery-based data across a range of sectors, career stages, and disciplines.

Data focus

- High-resolution satellite imagery across urban and rural environments
- Remotely sensed imaging, including nighttime lights, radar, or pollution, processed for applications in social sciences, public health, and policymaking
- Intuitive metrics for sustainability, prosperity and wellbeing, derived from imagery across space and over time

Imago, Data Service for Imagery

What's coming

- Engagement events with application partners and stakeholders to identify priorities
- Data products that translate pixels into insights through AI, delivered to users in familiar formats, multiple geographies, and intuitive interfaces
- Open training materials to demystify the use of imagery in social science, public health, and policymaking

Team

Imago is led by the University of Liverpool and Newcastle University.

Satellite imagery supports planning decisions

Accurate assessments of air pollution and house prices have traditionally relied on extensive and expensive 'on-the-ground' data collection. In 2022, Imago members at the Alan Turing Institute partnered with the Geospatial Commission to explore how decisions about land use could be supported with geospatial data, including earth observation data and artificial intelligence. The DemoLand project used data from multiple sources to predict quality-of-life indicators, including house prices and atmospheric pollution levels. The findings showed satellite imagery can provide a powerful complement and supplement to these approaches.

> *Satellite technology is capturing better and more timely information about the world than ever before. At Imago, we're thrilled to use AI and social science to make this data more accessible to researchers and policymakers."*
>
> **Professor Dani Arribas-Bel**
> Director of Imago

Smart Data Donation Service

Mission

Empowering individuals across the country to obtain their own digital footprints and share them safely with researchers.

Individuals in the UK have the right to obtain a machine-readable copy of the personal data that any corporation holds about them. The Smart Data Donation Service (SDDS) is the first piece of national research infrastructure built around this right.

SDDS will help citizens across the UK to obtain copies of their digital trace data; assist them in using it to understand their digital lives; and offer them the opportunity to enrich and donate their data for use in scientific research.

Initially focusing on social media and video game domains, SDDS aims to address the urgent need for evidence-based policy around online safety and digital wellbeing. It will facilitate research into diverse topics including mental health, media literacy, digital community, discriminatory behaviour, and disinformation.

Data focus

- Digital behavioural data from tens of thousands of individual donors
- Targeted sampling of youth and at-risk populations across digital platforms
- Combined digital trace data with self-reported experiences and perceptions
- Longitudinal datasets tracking individual changes in digital engagement patterns

Smart Data Donation Service

What's coming

- Tiered access system offering different security levels for sensitive data
- Community engagement through hackathons and a "lab in residence" programme
- Digital wellbeing indicators for policy development and intervention assessment
- Personalised tools enabling individuals to visualise and understand their own data

Team

Led by the University of York, with embedded partners from the Department of Culture, Media and Sport and Ofcom.

Gambling insights from banking data

University of York researchers conducted an innovative pilot study where they invited active gamblers to share their banking data. Through this approach, the team successfully quantified how gambling problem risk escalates with increased gambling expenditure.

The research also explored whether higher income levels served as a potential protective factor against gambling-related harm. This data-driven approach provided valuable insights into the relationship between income and gambling harms.

> *Our lives have become digitised, and so have the most important questions about what makes us happy, healthy, and human. SDDS will be bringing these two compelling areas of focus together, pioneering a new approach to safely sharing data."*

Dr David Zendle
Director of Smart Data Donation Service

Smart Energy Data Service

Mission

Transforming our understanding of the UK's energy system through integrated data from power networks, electric vehicles, and energy meters alongside socioeconomic indicators.

This integrated view of energy patterns and their social context will help tackle critical policy challenges around Net Zero, energy security and fairness.

The Smart Energy Data Service (SENSE) will support new research into complex human and economic systems, enabling evidence-based decisions about energy infrastructure investment, reducing disparities in urban and rural areas, and improving energy efficiency in schools, hospitals and other public buildings.

Data focus

- Comprehensive power network data across distribution and consumption points
- Electric vehicle usage patterns and charging infrastructure use
- Smart meter and automated meter readings (AMR) revealing building energy consumption
- Built environment statistics linked to energy efficiency metric

Smart Energy Data Service

What's coming

- Processed datasets integrating energy networks, meters, and demographic information
- Specialised energy data platform designed for research accessibility
- PhD secondment opportunities with industry and academic partners
- Analytical tools supporting Net Zero transition planning and energy justice analysis

Team

The Smart Energy Data Service is a consortium, led by Energy Systems. Catapult and the University of Oxford, in collaboration with partners including the Counting Lab, University of Birmingham, University of Bristol, University of Leeds, Leeds Beckett University, University of Reading, UCL and the Science and Technology Facilities Council's Hartree Centre.

Mapping EV charging needs and network demands

SENSE will unlock the power of smart data to enable equitable access to EV charging infrastructure, combining smart EV journey data with energy network data and the distribution of existing EV public charge points. The team will also enable researchers to investigate demands from domestic, private hire and non-domestic vehicles and the timing of demand. In combination with social demographic data, this understanding will facilitate research with real social value.

> *We're excited to be creating the national service for smart energy systems data, enabling innovation and joined-up policy solutions to the biggest sustainability and Net Zero challenges."*
>
> **Dr Richard Snape**
> Co-director, Smart Energy Data Service (Energy Systems Catapult)

Building the next generation of smart data researchers

SDR UK's data services go beyond providing access to data - collectively, they're developing the data scientists and researchers of tomorrow.

World-class training

From accessible webinars to intensive workshops, we aim to equip researchers with cutting-edge skills in data science, AI, visualisation, ethical data use and storytelling. Our specialised training focuses on practical applications across financial, energy, imagery, and health data domains.

Career development

Our development programmes will include:

- A Masters dissertation programme for students to work directly with industry
- Six-month funded fellowships for professionals
- Hands-on internships for early-career researchers
- Match-funded PhD studentships in specialised research areas
- Industry collaboration opportunities and mentoring programmes

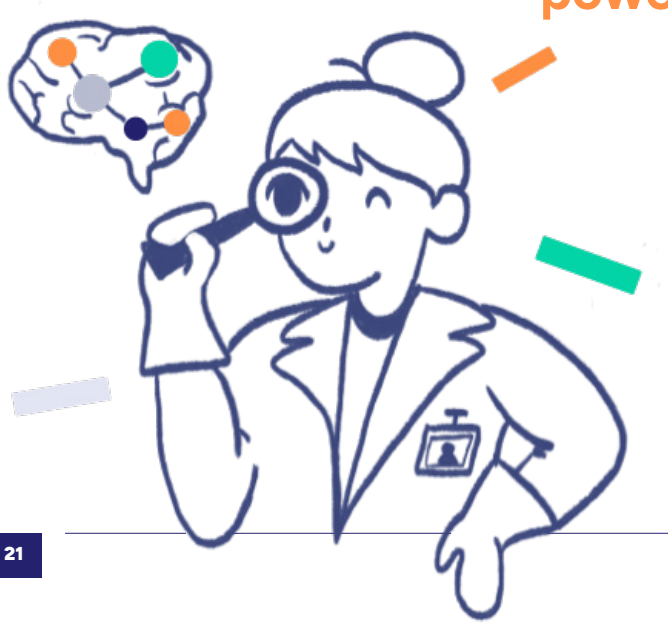
Community and collaboration

We're building vibrant communities where researchers, policymakers, the public, and industry experts converge to tackle society's most pressing challenges. Our knowledge-sharing initiatives and networking events will foster cross-disciplinary innovation.

Real-world impact

Through hackathons, challenge-based learning, and policy engagement training, we're developing skilled professionals who can translate smart data insights into meaningful social and economic change.

Join a nationwide community at the forefront of smart data research. Help us unlock the power of data to improve lives.



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sdruk.ukri.org

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info@sdruk.ukri.org