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Using digital information to enrich longitudinal population study data at the UK Longitudinal Linkage Collaboration

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Introduction & Background

UK Longitudinal Linkage Collaboration (UK LLC) is the national Trusted Research Environment (TRE) for the longitudinal research community. UK LLC works in collaboration with many of the UK's most established Longitudinal Population Studies (LPS) to support the linkage of participants' study data with health, socio-economic and environmental records; and by providing researchers with access to integrated and linked study data.

Objectives & Approach

To develop linkages with digital footprints data within a national TRE that hosts data for over 20 LPS. We describe the methodological development implemented to facilitate the linkage of emerging sources of data with LPS databanks in a privacy-preserving manner. These linked datasets will support research for public good and help to inform policy decisions for improved health and wellbeing.

Relevance to Digital Footprints

UK LLC's starting point for linking digital footprints data to longitudinal research is with geospatial data. Linkage with geospatial data builds upon longstanding activity within the partner studies, meaning that some of the challenges have already been identified and foundations already built. There are many openly available datasets that provide valuable indicators characterising participants' built and social environment.

Results

Some of the first use cases for UK LLC are the 'Access to Healthy Assets and Hazards' (AHAH) index (Consumer Data Research Centre) and Energy Performance Certificates (EPC). AHAH can complement existing studies and linked records adding important co-variables on 'hazards' such as access to alcohol, fast food and gambling outlets, and 'assets' such as leisure services, GP services and green space. Meanwhile, EPC records can be linked at household level to investigate the health impact of energy deprivation and housing quality.

Conclusions & Implications

Linking together longitudinal population data and digital footprints data is in its infancy and raises concerns relating to disclosure risk management. UK LLC uses a decision-making framework which acknowledges that anonymisation is heavily context-dependent, and only by considering both the data and their environment as a whole can we come to a well-informed decision about what controls are needed. UK LLC's work can contribute towards developing a mechanism for linking digital footprints data into longitudinal research resources. Central to this linkage is the maintenance of participant trust, co-creation and public involvement.

Keywords

Trusted Research Environment, GeoSpatial, Linkage, Environment



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