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Challenges in access, representativeness, and bias in smart financial data relating to income volatility and economic insecurity.

Nathan Bourne¹, Michael Spencer¹, and Oliver Berry¹

¹Smart Data Foundry (University of Edinburgh)

Introduction & Background

Financial transaction data are highly valuable sources of digital footprints data for behavioural and economic research, but to properly create impact we must closely consider their limitations.

Financial institutions hold a wealth of consumer data with untapped potential for community intelligence. These datasets combine excellent coverage with extremely granular information on consumer finances, income and spending, yet these institutions face great challenges in leveraging this data for social good. Smart Data Foundry is a university-owned, non-profit organisation that facilitates safe access to these datasets for researchers and provides insights to enable government bodies to tackle today's major challenges including the cost-of-living crisis and climate change.

Objectives & Approach

We will explore the opportunities afforded by these datasets for social and economic research. For example, using pseudonymised individual consumer banking data from NatWest Group, we have developed metrics for understanding income volatility and economic insecurity in collaboration with the Joseph Rowntree Foundation. We can also use these data to study consumer spending patterns and responses to economic changes such as interest rate rises and the net zero transition. We will assess the limitations of the data including issues of representativeness, bias, and missing data, and describe methods and mitigations to account for these challenges. We also discuss the barriers to accessing this type of data, in both relationship development with data partners, and privacy and governance concerns.

Relevance to Digital Footprints

Individual level customer transaction data provides a rich and novel form of digital footprint for behavioural and economic analyses. Every point of income or expenditure is recorded in a uniquely valuable digital footprint by financial institutions. These can provide a variety of insights, such as responses to macroeconomic shocks across demographic sets, emerging areas of financial distress, and help us better understand the drivers and risks of financial vulnerability. In both its aggregated and individual form, the data can provide an additional layer of understanding for trends we may see in other data, such as health or administrative data.

Conclusions & Implications

Having addressed the challenges of data access and data quality, we demonstrate that consumer banking data is an incredibly valuable form of digital footprints data, capturing key information on consumer behaviour. We conclude with a call for further research to develop use cases of this data for social good.

