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Author for correspondence:

Carmen Cabrera

e-mail: [C.Cabrera@](mailto:C.Cabrera@liverpool.ac.uk)

[liverpool.ac.uk](mailto:C.Cabrera@liverpool.ac.uk)

Supplementary Information

Carmen Cabrera¹, Francisco Rowe¹

¹Geographic Data Science Lab, Department of Geography and Planning, University of Liverpool, Liverpool, United Kingdom.

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The main document should include:

Title (no more than 150 characters)

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All main manuscript text. Ensure that all figures, tables and any relevant supplementary materials are mentioned within the text

References

Acknowledgements and funding statement (ensure that you have included grant numbers and the names of any funding providers)

Tables with captions

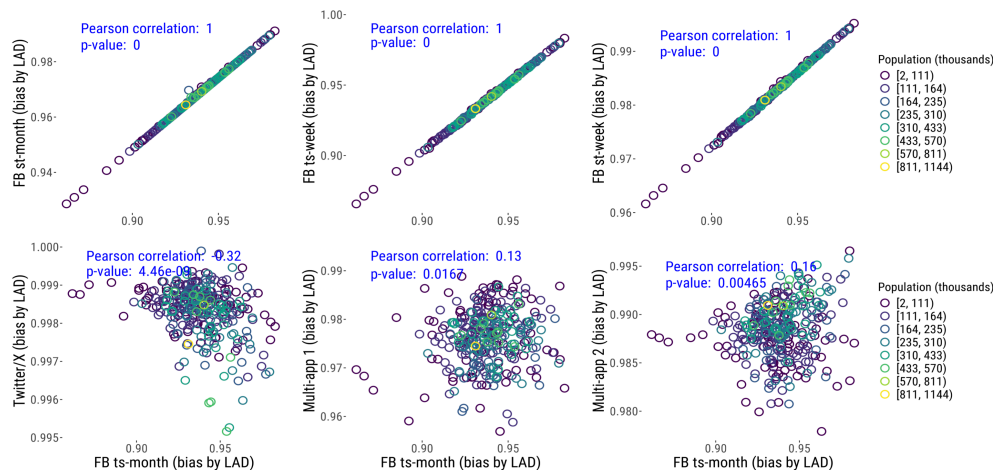
Figure captions with credits where relevant

Data Source	Form of data collection	Temporal granularity	Temporal coverage	Finest spatial resolution available	Access method	Free at time of access
Facebook Population	GPS from app users with location services enabled	8-hour windows	March 2021	Bing Tiles level 13 (~4.9 km at Equator)	Restricted access via Facebook Data for Good	Yes
Twitter (X)	Geotagged tweets and IP-based location via Academic API (pre-processed)	Month	March 2021	Local Authority District (LAD)	Open access via GitHub (pre-processed)	Yes
Multi-app GPS, Source 1	GPS data from multiple apps	Second	First week, April 2021	GPS coordinates	Proprietary, from analytics company (not public)	No
Multi-app GPS, Source 2	GPS data from multiple apps (pre-processed)	Aggregated GPS data	November 2021	MSOA	Open access via GitHub (pre-processed)	Yes

Figure 1. Supplementary Table 1. Summary description of data sources used in the article, including key features.

1. Summary description of data sources

2. Alternative data aggregation approaches for Facebook data



3. Testing for spatial autocorrelation in the size of bias

according to multiple spatial weighting schemes → compute moran's I and p-values, display them in a table (schemes as columns, data source as rows)

Ethics. Please provide details on the ethics.

Data Accessibility. Please provide details on the data availability.

Authors' Contributions. Please provide details of author contributions here.

Competing Interests. Please declare any conflict of interest here.

Funding. Please provide details on funding

Disclaimer. Please provide disclaimer text here.

Acknowledgements. Please include your acknowledgments here, set in a single paragraph. Please do not include any acknowledgments in the Supporting Information, or anywhere else in the manuscript.

		Queen neighbours	k-nearest neighbours	Distance band (optimal)	Distance band (user)
Twitter/X		0.019***	0.014**	0.009*	-5.289e-5 (n.s.)
Facebook	tts-week	0.078*	0.103***	-0.104*	0.132***
	tts-month	0.078*	0.101***	-0.103*	0.130***
	stt-week	0.079*	0.103***	-0.104*	0.131***
	stt-month	0.078*	0.101***	-0.104*	0.131***
Multi-app GPS 1		0.101***	0.009 (n.s.)	0.084***	0.078***
Multi-app GPS 2		0.467***	0.437***	0.295***	0.181***

***p<0.001, **p<0.01, *p<0.05, not significant (n.s.)

Figure 2. Supplementary Table 2. Moran's I coefficients and significance, computed according to four spatial weights schemes,