nature portfolio

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Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our Editorial Policies and the Editorial Policy Checklist.

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a	Confirmed	
☐	☒	The exact sample size (*n*) for each experimental group/condition, given as a discrete number and unit of measurement
☒	☐	A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐	☒	The statistical test(s) used AND whether they are one- or two-sided *Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
☒	☐	A description of all covariates tested
☐	☒	A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
☐	☒	A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
☐	☒	For null hypothesis testing, the test statistic (e.g. *F*, *t*, *r*) with confidence intervals, effect sizes, degrees of freedom and *P* value noted *Give P values as exact values whenever suitable.*
☒	☐	For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☒	☐	For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☐	☒	Estimates of effect sizes (e.g. Cohen's *d*, Pearson's *r*), indicating how they were calculated

Our web collection on statistics for biologists contains articles on many of the points above.

Software and code

Policy information about availability of computer code

Data collection	The data extraction from OpenStreetmap was done using the Python bindings (https://osmcode.org/pyosmium/ v.3.6.0) for Osmium (https://osmcode.org/libosmium/)
Data analysis	The Python (v 3.9) and R (v4.5.1) code to compute park health scores is available at https://github.com/LinusDietz/Health-Promoting-Parks-Replication.

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio guidelines for submitting code & software for further information.

Data

Policy information about availability of data

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our policy

The replication package contains tables of the park health scores in the cities: https://github.com/LinusDietz/Health-Promoting-Parks-Replication. The original

OpenStreetMap data used for scoring the parks is publicly available and can be best obtained from one of the third-party download servers, for example from https://download. geofabrik.de. The Flickr dataset for the validation can not be shared due to terms of conditions of this dataset.

Human research participants

Policy information about studies involving human research participants and Sex and Gender in Research.

Reporting on sex and gender	We have not collected any sex or gender-related information in this survey, as we did not analyze any hypotheses regarding gender, nor deemed this to be a relevant factor with respect to the goal of the survey. Keep in mind that the citizen survey is not a central part of the analysis (reported in the appendix A5 only).
Population characteristics	We collected a minimal set of demographics, namely the age groups 18-24: 16; 25-34: 35; 35-44: 15; 45-54:10; 55-64: 4; 65 and over: 1 and the postal area of the citizens. The reported postal areas were following the population distribution of London.
Recruitment	We recruited participants through the the King's College London research recruitment portal as well as mailing lists within scientific institutions in London. Thus, respondents are likely to be more educated than average citizens but encompassed varied ages as our data distribution shows. There is a potential self-selection bias, as individuals with a higher than average educational background may have been more likely to participate, which could limit the generalisability of our findings to the wider population.
Ethics oversight	King's College London Research Ethics Office, ID: MRA-22/23-38802

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☐ Behavioural & social sciences ☒ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see nature.com/documents/nr-reporting-summary-flat.pdf

Ecological, evolutionary & environmental sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	The study counts map objects from OpenStreetMap to quantify the overall contributions of a park towards providing means for engaging in health-promoting activities. This novel approach aims to quantify the health potential of each park in a unified score. It is a observatory study design without an experimental intervention.
Research sample	The research sample were 23,477 parks in 35 global cities.
Sampling strategy	We included all named parks in all cities that were tagged as such in OpenStreetmap.
Data collection	The first author collected all data from OpenStreetMap Snapshots. These snapshots were downloaded from https://geofabrik.de, a data provider for OpenStreetMap data.
Timing and spatial scale	All data snapshots of the final analysis were downloaded on October 27, 2023. The Flickr data for the validation stems from 2004-2015.
Data exclusions	We excluded parks that did not have a name, as we expect that these parks are of insignificant size and importance.
Reproducibility	Reproducibility is possible using the provides replication pack. The software has been verified to produce the same results in repeated runs.
Randomization	Randomization is not applicable to this study design, as there are no different groups.
Blinding	As the scores are computed by a software, blinding is not applicable to this study design.

Did the study involve field work? ☐ Yes ☒ No

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology and archaeology
☒	☐ Animals and other organisms
☒	☐ Clinical data
☒	☐ Dual use research of concern

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging