Supplementary materials

Data sources

The data sources used for the construction of the birth outcomes and CFE variables were the following:

a) **Live births data** *(References: Ministerio de Salud [MSAL], 2018. Nacidos Vivos. Recuperado el 16 de mayo de 2023.* https://www.argentina.gob.ar/salud/deis/datos/nacidosvivos*; Ministerio de Salud [MSAL], 2019. Nacidos Vivos. Recuperado el 16 de mayo de 2023. https://www.argentina.gob.ar/salud/deis/datos/nacidosvivos.)*

b) **Percentage of Alimentar Card holders** (data were sourced from the Ministry of Social Development's report on beneficiary numbers by jurisdiction spanning from 2020 to 2022) *(References: Ministerio de Desarrollo Social de la Nación [MDS], Secretaría de Inclusión Social, 2022. Titulares de la Prestación Alimentar. Recuperado el 29 de mayo de 2023.* https://datos.gob.ar/dataset/desarrollo-social-titulares-prestacion-alimentar *; De Grande P, Rodriguez G, 2023. Censo Nacional de Población, Hogares y Viviendas 2022 - Resultados provisionales. Recuperado el 11 de agosto, 2023, de https://mapa.poblaciones.org/map/151701.)*,

c) **Percentage of individuals enrolled in the Empowering Work program** (data were retrieved from the Ministry of Social Development's report on enrolled individuals by jurisdiction spanning from 2020 to 2022) *(Reference: Ministerio de Desarrollo Social de la Nación [MDS], Secretaría de Inclusión Social, 2021. Potenciar Trabajo. Recuperado el 1 de septiembre de 2023. https://datos.gob.ar/dataset/desarrollo-social-potenciar-trabajo.),*

d) **Infant Mortality Rate (IMR)** (jurisdiction-specific data for the year 2018 was obtained, systematically compiled by the Ministry of Health and is accessible on the Populations platform - https://mapa.poblaciones.org/map -) *(Reference: De Grande P, Bonfiglio J, Bullo M, 2020. Mortalidad infantil en la Argentina, 2005-2018. Recuperado el 7 de junio, 2023, de https://mapa.poblaciones.org/map/43301.)*.

e) **Mean elevation above sea level** (altitude data collected and disseminated by the National Aeronautics and Space Administration (NASA) in 2000, accessible via the Google Earth Engine Explorer Platform (GEEE) -https://explorer.earthengine.google.com/#index-) *(Reference: 1. NASA JPL, 2020. NASADEM Merged DEM Global 1 arc second V001 [Data set]. NASA EOSDIS Land Processes DAAC. Accedido el 2023-06-07 desde https://doi.org/10.5067/MEaSUREs/NASADEM/NASADEM_HGT.001.)*,

f) **Predominant land use/land cover class in the peri-urban area** (data were extracted from the European Space Agency (ESA) World Cover coverage map (rescaled to a 300 m resolution) utilizing the Google Earth Engine (GEE) platform) *(Reference: European Spatial Agency [ESA], 2020. ESA WorldCover 10m v100. Disponible en: https://explorer.earthengine.google.com/#detail/ESA%2FWorldCover%2Fv100.)*

g) **Normalized Difference Vegetation Index (NDVI)** (information computed on the GEE platform using a collection of Sentinel 2 images corresponding to the 2018-2019 summer season),

h) **Night Lights** (data were obtained from VIIRS Stray Light Corrected Night-time Day/Night Band Composites Version 1 product for the year 2018, downloaded from GEEE) *(Reference: Earth Observation Group [EOG], 2021. VIIRS Stray Light Corrected Nighttime Day/Night Band Composites Version 1. Recuperado de https://explorer.earthengine.google.com/#detail/NOAA%2FVIIRS%2FDNB%2FMONTHLY_V1%2FVCMSLCFG.EOG, 2021),*

i) **Average precipitation** (obtained from historical precipitation data spanning from 1970-2000, downloaded from the WorldClim 2.1 platform - https://www.worldclim.org/-) *(Reference: Fick SE, Hijmans RJ, 2017. WorldClim 2: new 1km spatial resolution climate surfaces for global land areas. Int J Climatol 37(12):4302-4315.*

j) **Percentage of female-headed households**,

k) **Percentage of households with heads of household who have completed high school education**,

l) **Percentage of households with unsatisfied basic needs (UBN),**

m) **Percentage of individuals with social security coverage**,

n) **Percentage of children aged 5-17 not attending formal education institutions**, were acquired from the spatialized socio-demographic indicators of the 2010 National Census, downloaded from the Populations platform *(Referencia: De Grande P, Salvia A, 2019. Indicadores del Censo Nacional de Población, Hogares y Viviendas, 2010. Recuperado el 11 de agosto, 2023, de https://mapa.poblaciones.org/map/3701.; De Grande P, Rodriguez G, Bonfiglio JI, 2021. Indicadores del Censo Nacional de Población, Hogares y Viviendas, 2010 (cuestionario ampliado). Recuperado el 11 de agosto, 2023, de https://mapa.poblaciones.org/map/83401.*

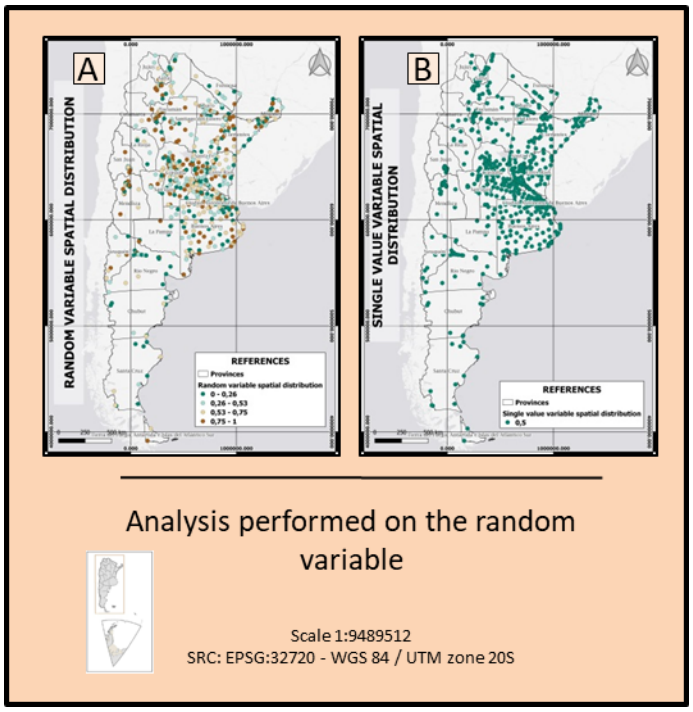
References about the analysis

1. Esri, s.f. Análisis de puntos calientes optimizado (Estadística espacial). Disponible en: https://pro.arcgis.com/es/pro-app/latest/tool-reference/spatial-statistics/optimized-hot-spot-analysis.htm.

2. Esri, 2022. Clustering multivariante restringido espacialmente (Estadística espacial). Disponible en: https://pro.arcgis.com/en/pro-app/3.0/tool-reference/spatial-statistics/spatially-constrained-multivariate-clustering.htm.
3. Esri, 2023. Spatial Autocorrelation (Global Moran's I) (Spatial Statistics). Disponible en: https://pro.arcgis.com/en/pro-app/latest/tool-reference/spatial-statistics/spatial-autocorrelation.htm.
4. Kulldorff M, 2022. SaTScan™ User Guide for version 10.1. Disponible en: https://www.satscan.org/techdoc.html.
5. Santamaría MS, Malla MS, 2006. Notas sobre el manejo del software geoestadístico Variowin. Parte I: Cálculo del variograma. Rev Inst Investig Fac Minas Metal Cienc Geogr 9(18):82-90.

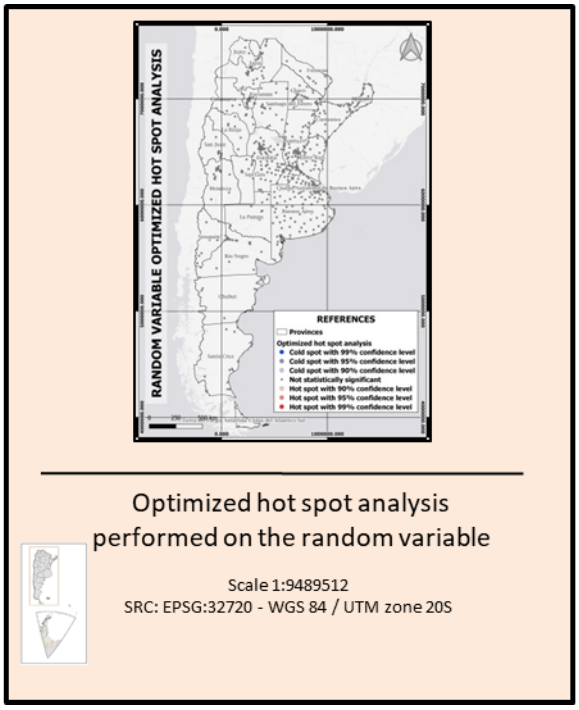
Analysis performed on random and single value variables

Spatial distribution



Hot spot optimized analysis

The single value variable could not be analyzed by this method due to its lack of variability.



Purely spatial analysis

For both variables, no significant clustering of high or low values was observed.

Spatial autocorrelation analysis (Moran's index)

The single value variable could not be analyzed by this method due to its lack of variability. About the random variable, Table 2 shows the obtained results. It can be observed that given the z-score evidenced, the pattern of the variable is not substantially different from a random pattern.

VARIABLE	MORAN'S INDEX	Z-SCORE	P-VALUE
Random variable	0,022235	1,468997	0,141834