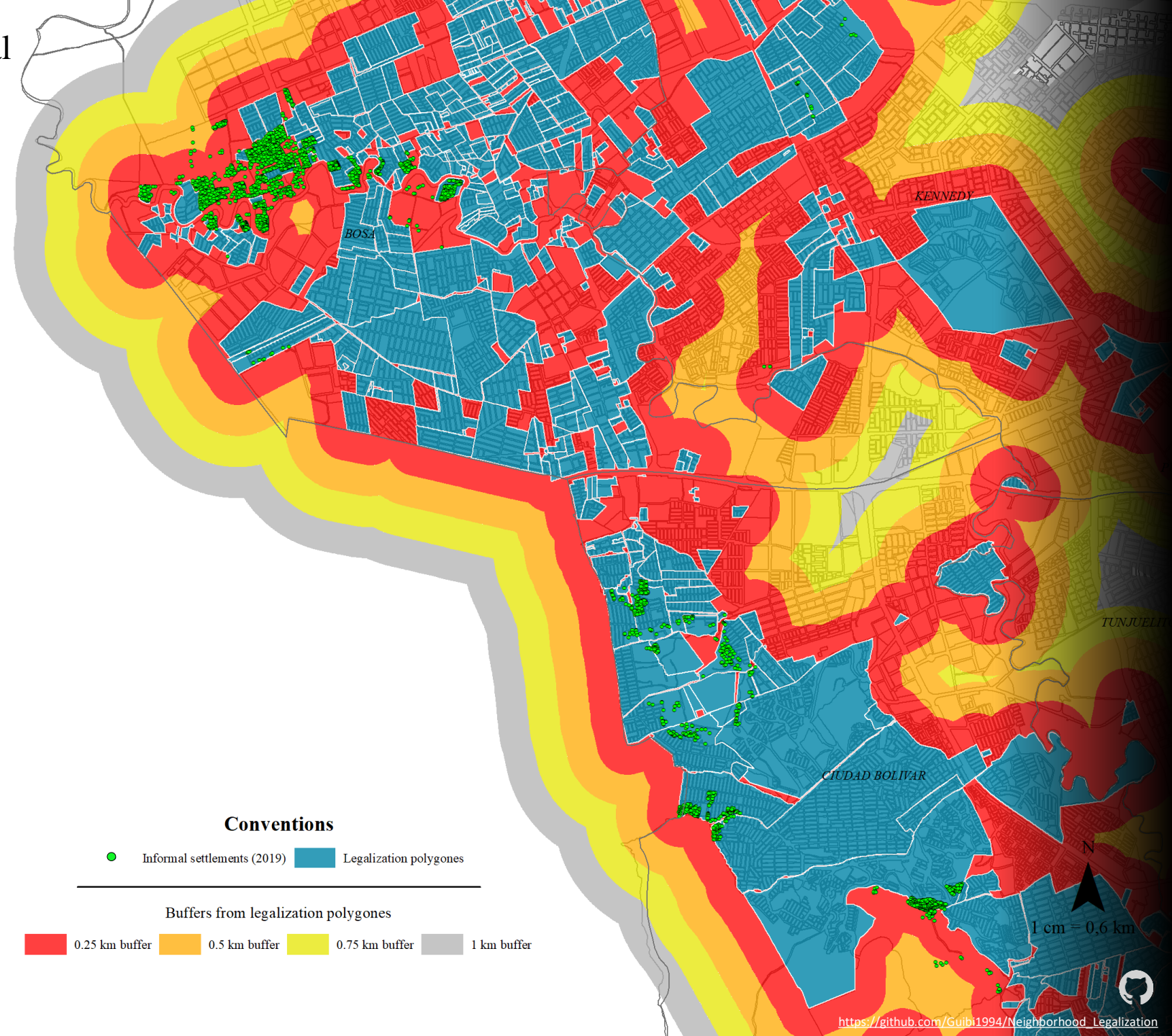


Slum recognition effects on urban informal expansion:

An impact evaluation of the Neighborhood Legalization program in Bogotá, Colombia

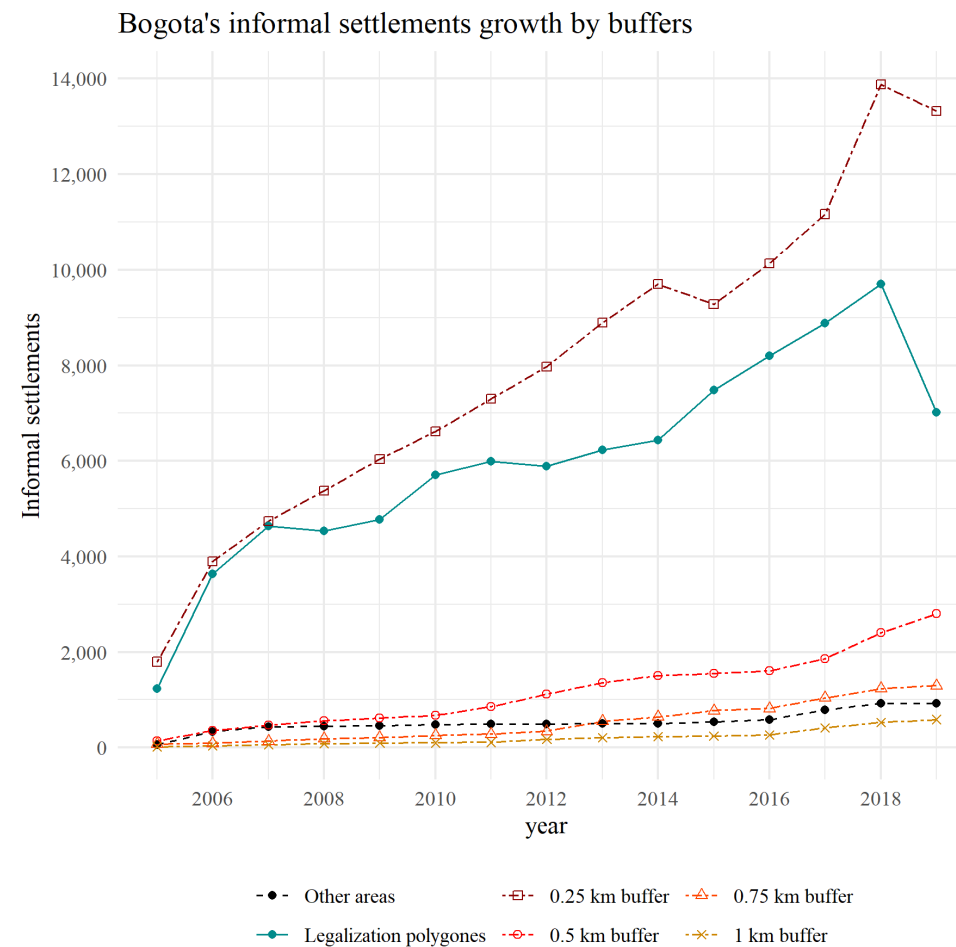
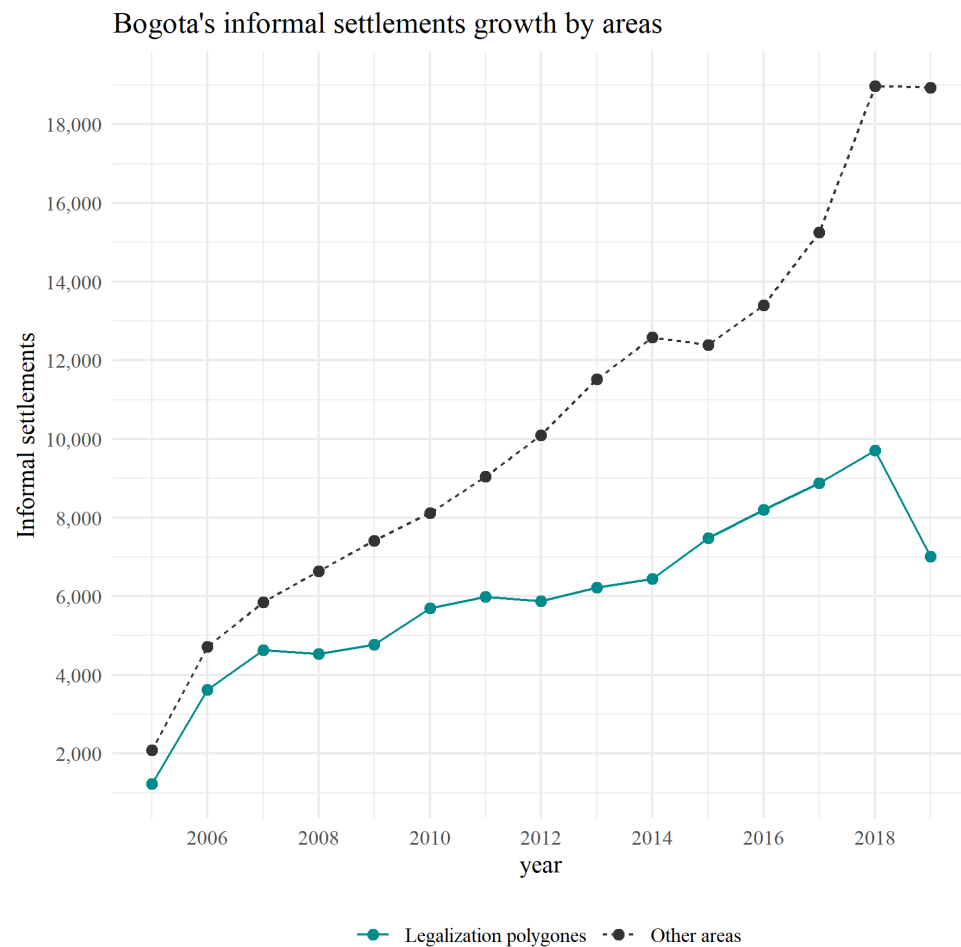


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- Urban expansion is one of the most important events in South America's recent history. In the case of Bogotá, the urban population almost doubled in the last 3 decades (DANE, 1989, 2005 and 2018), and up today is the 46th most dense urban area in the world
- Due to various factors, such as economic transitions, lack of response by local and national authorities, natural catastrophes and the internal conflict, most of this growth have mostly consisted in the expansion of slums (the informal city) (Camargo et al. 2020).
- The last have generating an important issue in terms of habitat: 3.8% of Bogotá's household are in quantitative deficit while 10.2% are in qualitative deficit (DANE 2018).
- To overcome this challenge, Colombian authorities compounded all the urbanistic normative framework and urbanistic instruments inside the law 388 of 1994 , which give birth to the POTs (*Planes de Ordenamiento Territorial*). This urban plans, created programs and norms, to re-conduct the spontaneous sudden urban growth. Among this programs, there was the **neighborhood legalization program**.
- The **neighborhood legalization** have consisted in **recognizing informal/illegal settlements**, so they can be letter could later be provided with public infrastructure and amenities, in contrast of solution based on constructing entirely new social housings.

- Between the debate between **formalization** and **formal construction**, one of the main critiques towards legalization has been that it generates incentives to informal growth. Nevertheless, this question about whether legalization fosters informal growth or not, remains unknown.



Does the neighborhood legalization program have an effect on informal growth?

International studies

- Salud:
 - Turley, R., et al 2013: Reduction of water-related diseases.
 - Henson, R. M., et al. 2020: Evidence of positive health effects, including those of housing on quality of life and communicable diseases.
- Economía:
 - Casas, 2018: Dif-Dif, based on 8 neighborhoods in Nicaragua. Positive effects on housing quality, security perception and creation of new business.
 - Akie Takeuchi, et al. 2008: Mumbai, neighborhood improvement program had effects on rent, but depending on general connectivity.
 - Majale, M. 2008. Analyzes how these programs can generate jobs in informal neighborhoods

Local studies:

- Nieto, C. A. B., et al 2012. founded significant effects of the Neighborhood improvement program over land prices (just in Bosa, Bogotá).
- Corredor, C, 2020. also founded an increase in land prices, but derived from neighborhood legalization programs in Bogotá

The literature gap:

- Most of the articles ignore city level effects, and in physical transitions more than legal changes.
- Most of the research focuses on positive outcomes: most of the time on **redundant** and **deterministic** policy effects.
- Most of the literature ignore the central philosophy of this policies: controlling the expansion to the informal/illegal city (the *wellbeing/welfare fallacy*)



Neighborhood Legalization polygons with legal process info* (1950-2019)



Neighborhood Improvement program polygons* (2002-2019)



Resettlement Program points (2004-2019)



Informal constructions –SDH (2005-2019)



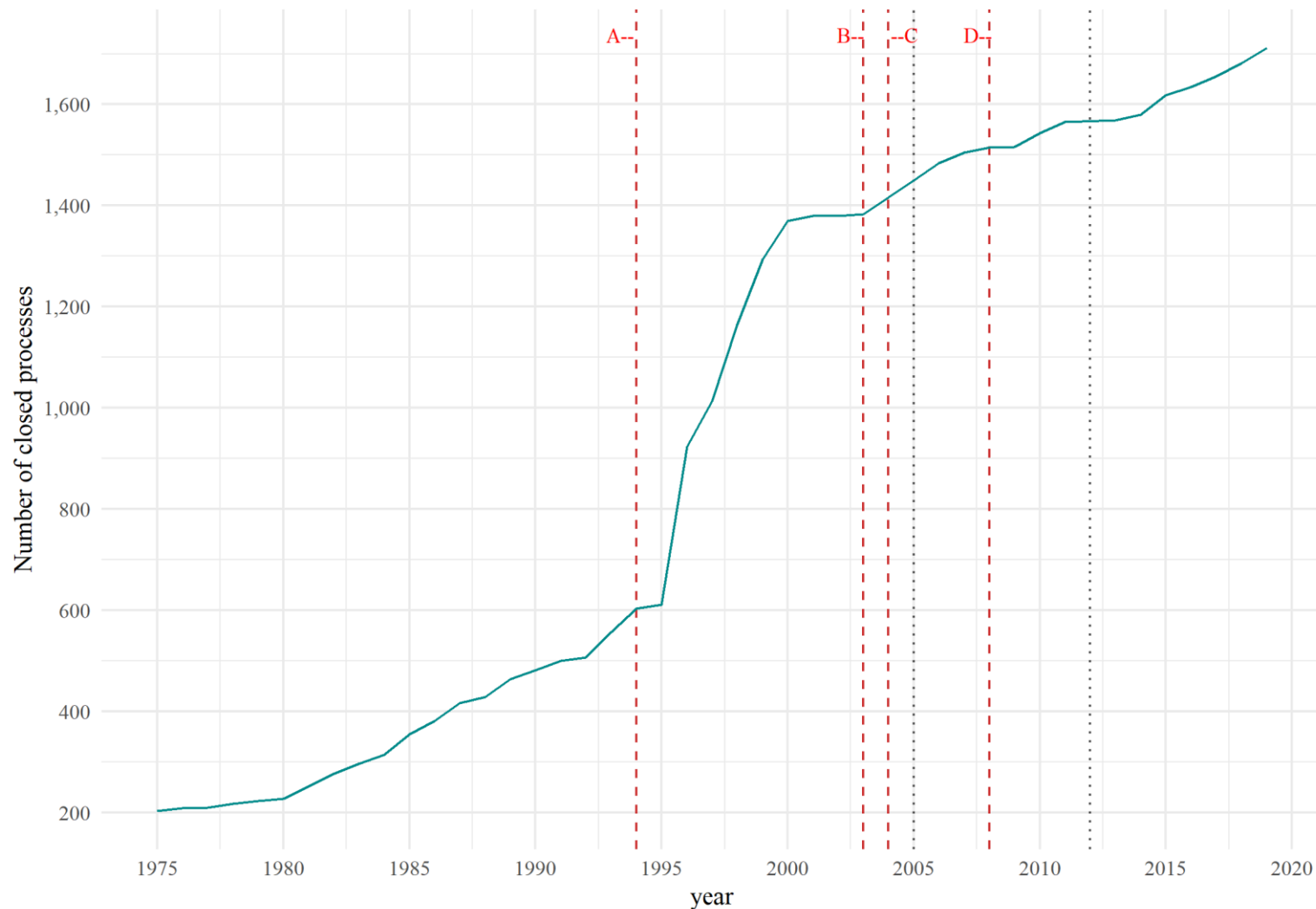
Formal constructions – ODC (2012-2019)



Census data (2005 and 2018)

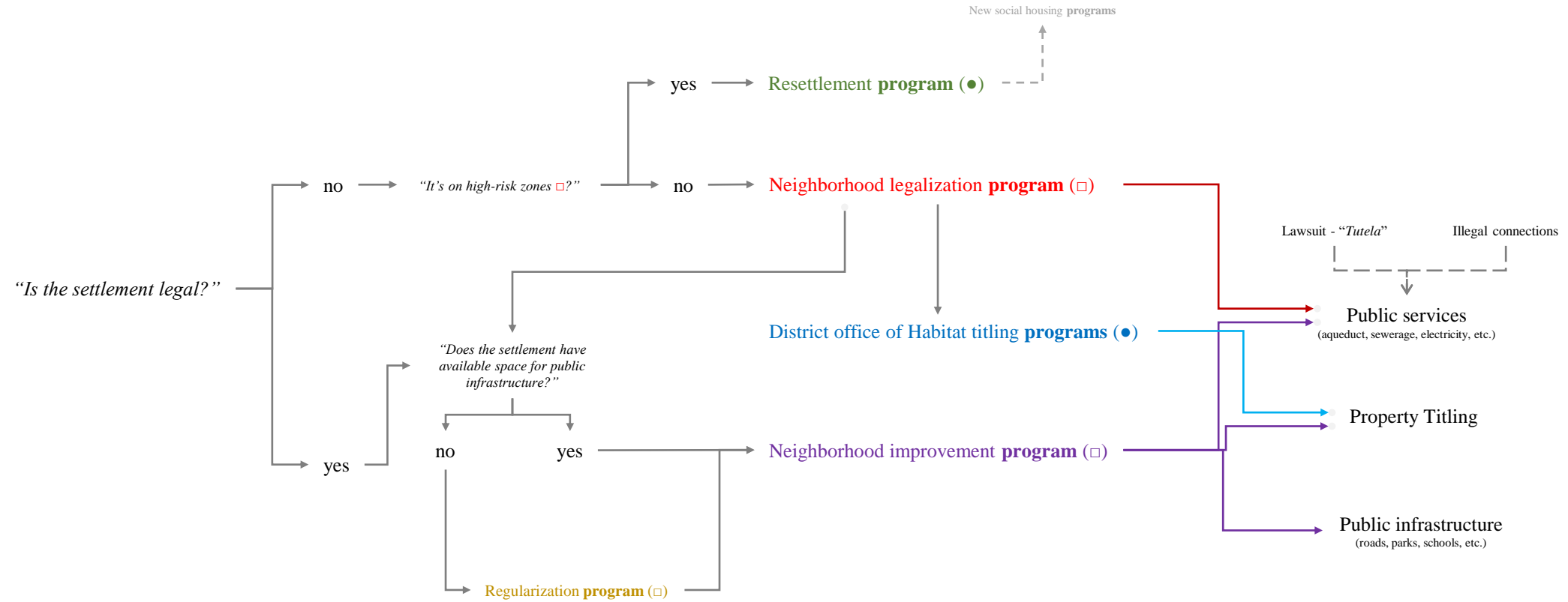
Cumulative number of neighborhood legalizations (1975-2019)

Bogotá, Colombia

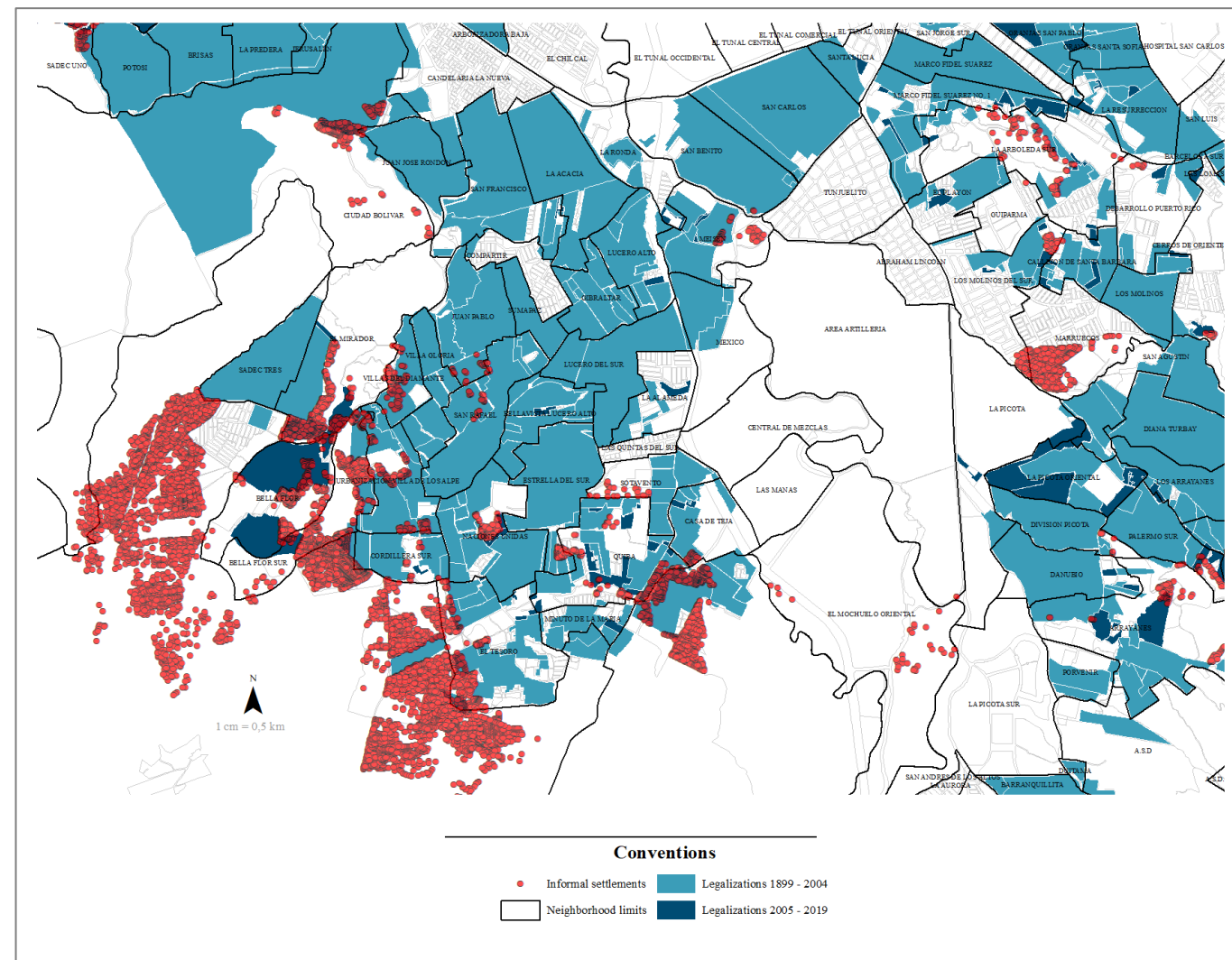


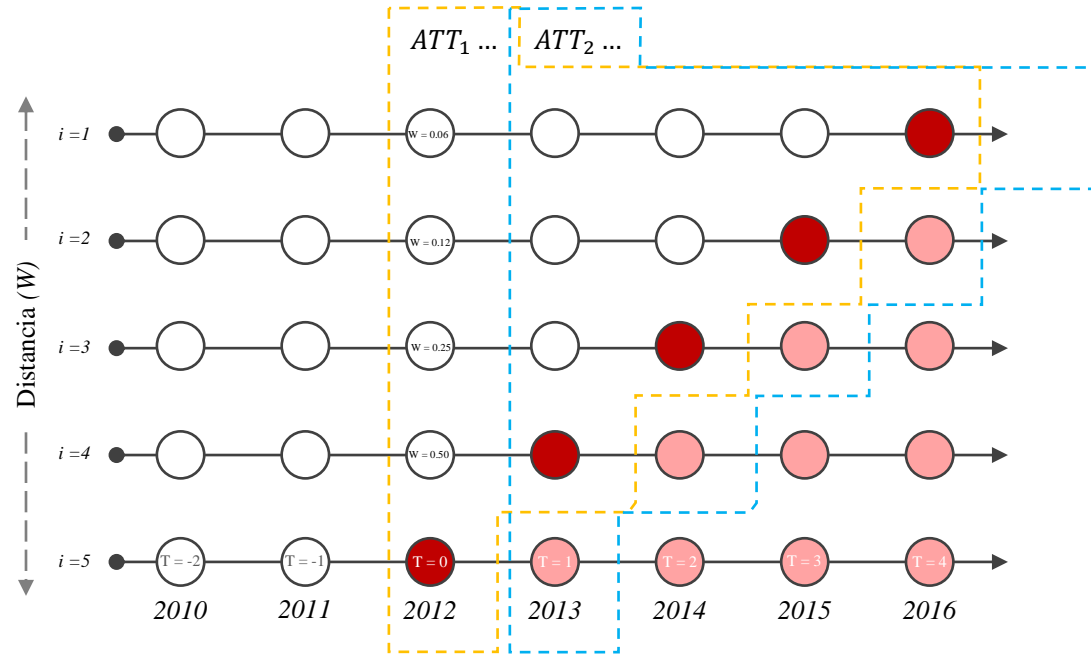
Historical milestones:

- A.** .1994: The Law 388 gave to all municipalities the order to formulate their first POT's.
- B.** .2003: President Alvaro Uribe Velez established in his *Developing Plan* that informal settlements which origin year were after 2003, could not be legalized nor receive any public investment. (VIS/VIP/Macro)
- C.** .2004: Bogotá finally (by decree) adopts its first POT (decree 190 of 2004).
- D.** .2008: The constitutional court declare the 2003 restriction against the constitution.

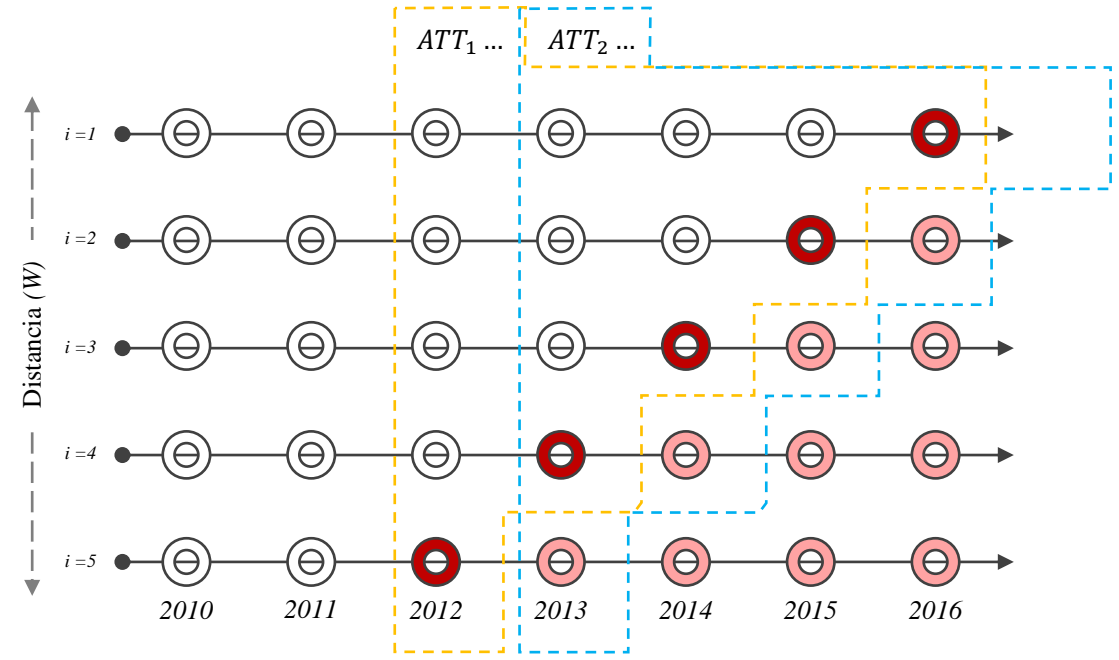


- **Violación de SUTVA, geográfica y macro-teporalmente**
- **Anticipación del tratamiento**
- **Relación entre las variables dependientes principales y otros programas similares**
- No hay unidades “never-trethead”
- Pérdida del poder de comparación con el tiempo
- Sin información de dependientes y covariables de la mayor parte del programa
- Endogeneidad entre el tratamiento y la variable de efecto
- Cambio en las condiciones del tratamiento (agua como derecho)
- Sesgos de error de medición

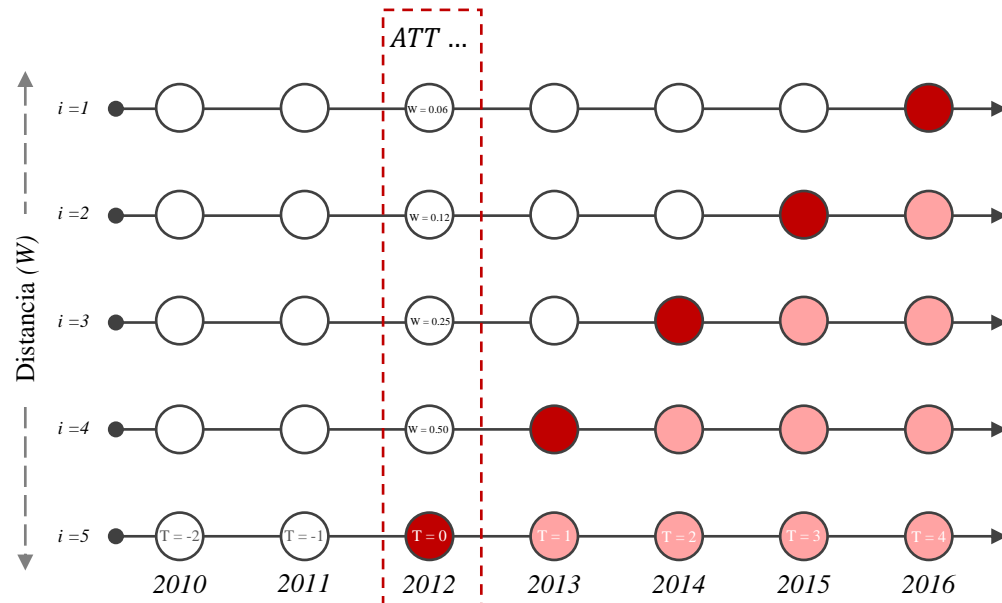




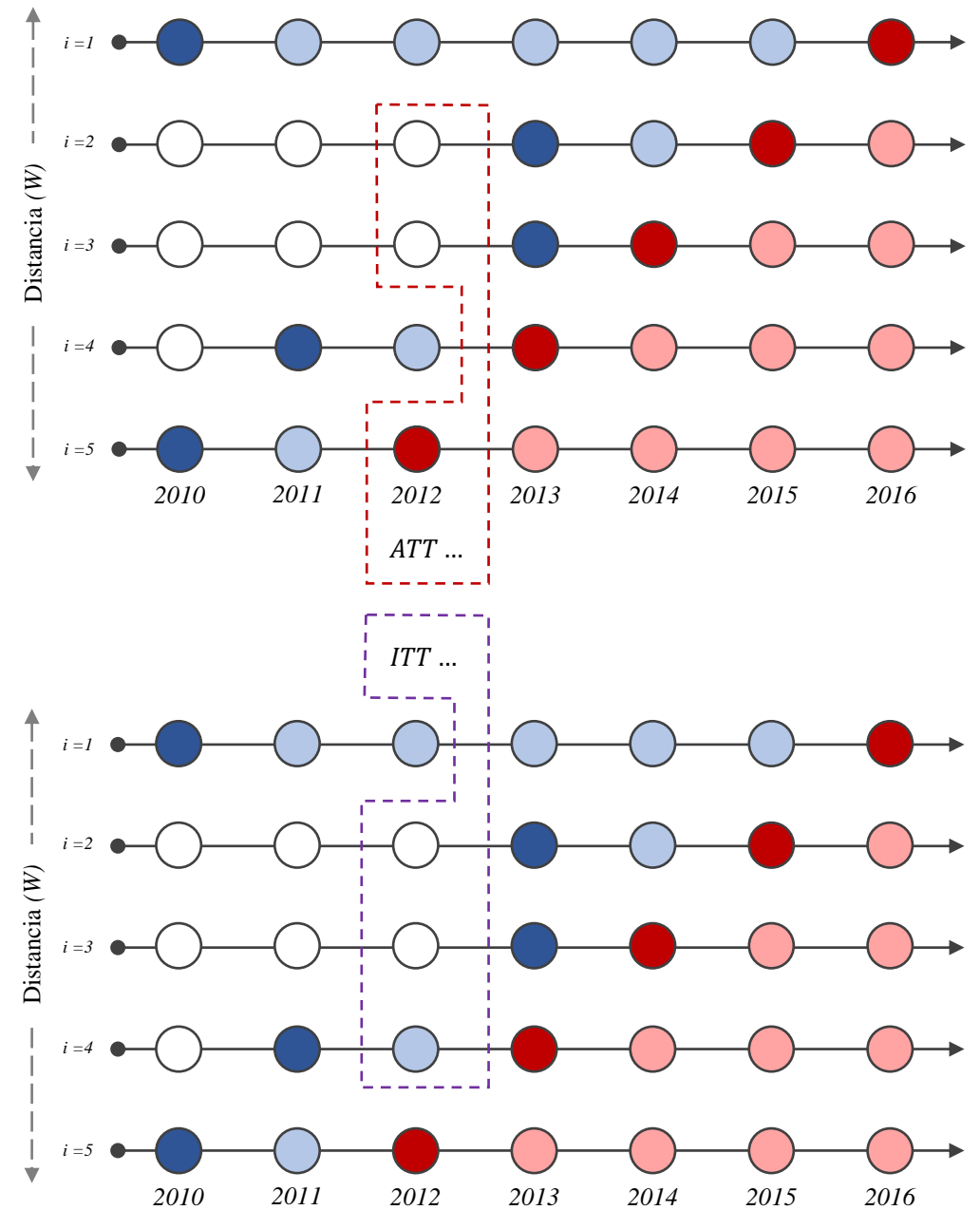
- Año previo a ser legalizado ($C = 1$)
- Año de legalización ($T = 1 / T = 0$)
- Año después de legalizado ($T = 1 / T = 1+t$)



- ⊙ Buffer de x radio



- Año previo a ser legalizado (C = 1)
- Año de inicio del proceso de legalización
- Año de legalización (T = 1 / T = 0)
- Año entre el aviso y la ejecución
- Año después de legalizado (T = 1 / T = 1+t)



- Violación de SUTVA, geográfica y macro-teporalmente
- Anticipación del tratamiento
- No hay unidades “never-trethead”
- Pérdida del poder de comparación con el tiempo
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