

Descripción del proyecto
“Urban form and its impact on sustainable development”
para el desarrollo de potenciales tesis doctorales dentro del grupo RiSE.

RiSE-group
Departamento de Ciencias Matemáticas
Escuela de Ciencias
Universidad EAFIT
Abril 2019

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Habilidades mínimas requeridas para cualquier candidato interesado:

- Excelente manejo de bases de datos
- Manejo de lenguaje Python y STATA
- Buen nivel de Inglés
- Manejo básico de Sistemas de Información Geográfica
- Buen nivel de escritura académica (excelente nivel de redacción)
- Excelentes notas en cursos cuantitativos a nivel de pregrado y maestría (estadística, econometría, optimización, etc.)

Project approval – Stage 2: template

Project title: Urban form and its impact on sustainable development.
Timeline: October 2018 - December 2021 (3 years and 2 months).
Project Leader: Jorge E. Patiño.
Researcher(s): Jorge E. Patiño, Jairo A. Gómez, Mauricio Quiñones, Eduardo Lora, Juan Carlos Duque.
PEAK dynamic: *prediction and projection (P)* by understanding how current urban form features impact sustainable development and quality of life, *emergent urbanisms (E)* by identifying how rapid urbanization contributes to adverse urban environments for the poorest, and *knowledge exchange (K)* by sharing findings made in Latin American cities with policymakers, multilateral institutions, and other representatives from developing regions.

Introduction (300 words maximum)

In previous studies, Whyte (1968), Batty and Longley (1994), and Prospero et al. (2009) stated that the characterization of an urban form should include information on three dimensions: border shape, urban texture, and land use patterns. The urban form is related to a variety of topics, from economic productivity to public health and human well-being. Some of the factors that affect the level of physical activity of individuals are related to the built environment of the city: use of the land, transportation safety, aesthetic attributes, street connectivity, and the presence and accessibility of green and recreational spaces (Markevych et al., 2017; Wang and Banzhaf, 2018).

Today, Latin America and the Caribbean (LAC) is the second most urbanized region of the planet, with 81% of its population living in urban areas (United Nations, 2018). However, LAC cities are still segregated both at the social and spatial level (UN-Habitat, 2012). This situation is expressed in the high urban income inequality, the persistence of informal settlements, and uneven access to public spaces, among other issues (UN-Habitat, 2012). As noted by (BBVA Research, 2017), the growth rate of the urban population in the LAC region has been declining and the urban population is expected to grow below the world average over the next decades. In contrast, most of the world’s urban population growth in next decades will take place in Asia and Africa (United Nations, 2018). For this reason, by revisiting the built environment in LAC cities and improving the understanding of urban sustainability problems, we could transfer important lessons in the management of urban spaces to Asia and Africa, contributing to the achievement of the Sustainable Development Goals (SDG, United Nations, 2018).

Aims and research questions (100 words maximum)

Questions in Table 1 focus on the impact of urban form on people in developing countries vs. SDG.

Table 1. Research questions and related SDG targets.

Question	SDG Target
1. To what extent the socioeconomic stratification in Colombia is worsening people’s spatial and social segregation, and how is it constraining the urban form?	11.1-11.3
2. What is the evenness level in the spatial distribution of urban green spaces across LAC cities?	11.3-11.7
3. What is the level of geographic accessibility to health care facilities in Colombian cities?	3.8