

The bicycle as contribution to the logistic efficiency of freight transport in the last mile

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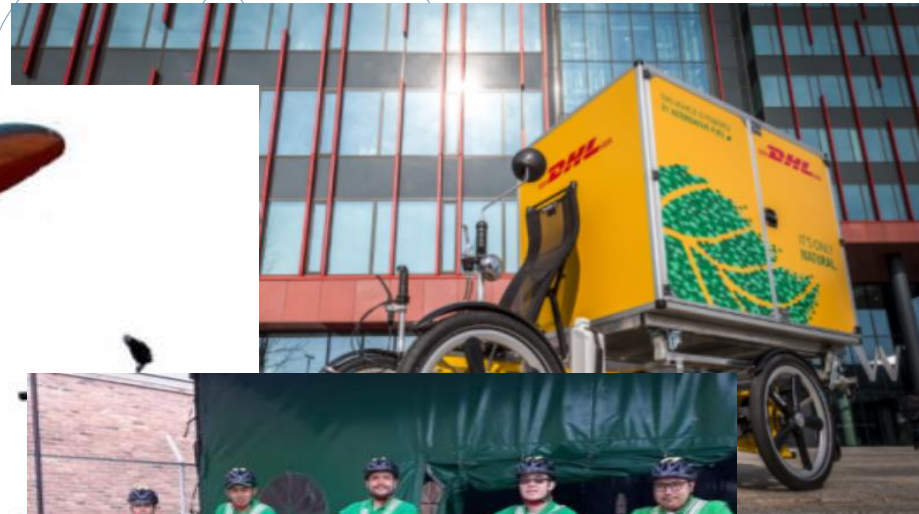
OUTLINE

- Introduction
- Use of the Cargo Bikes
- Purpose of investigation
- Modelling Approach
- Variables
- Case study: Medellin, Colombia
- Conclusions and Recommendations



1. INTRODUCTION

Urban freight transport
(externalities)



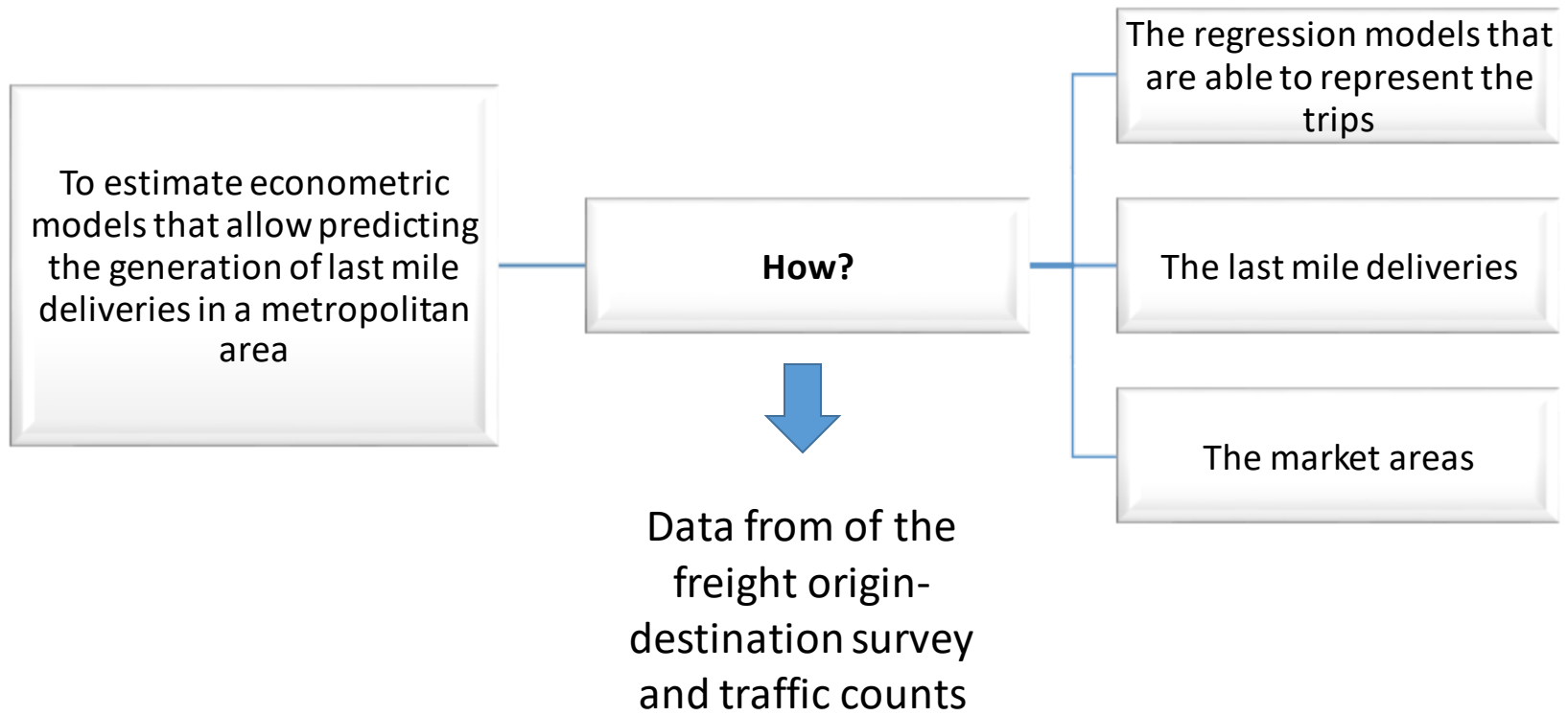
Others...

Traffic Ban



VREF CENTER OF EXCELLENCE FOR
**SUSTAINABLE URBAN
FREIGHT SYSTEMS**

2. WHAT IS THE PURPOSE OF THIS INVESTIGATION?



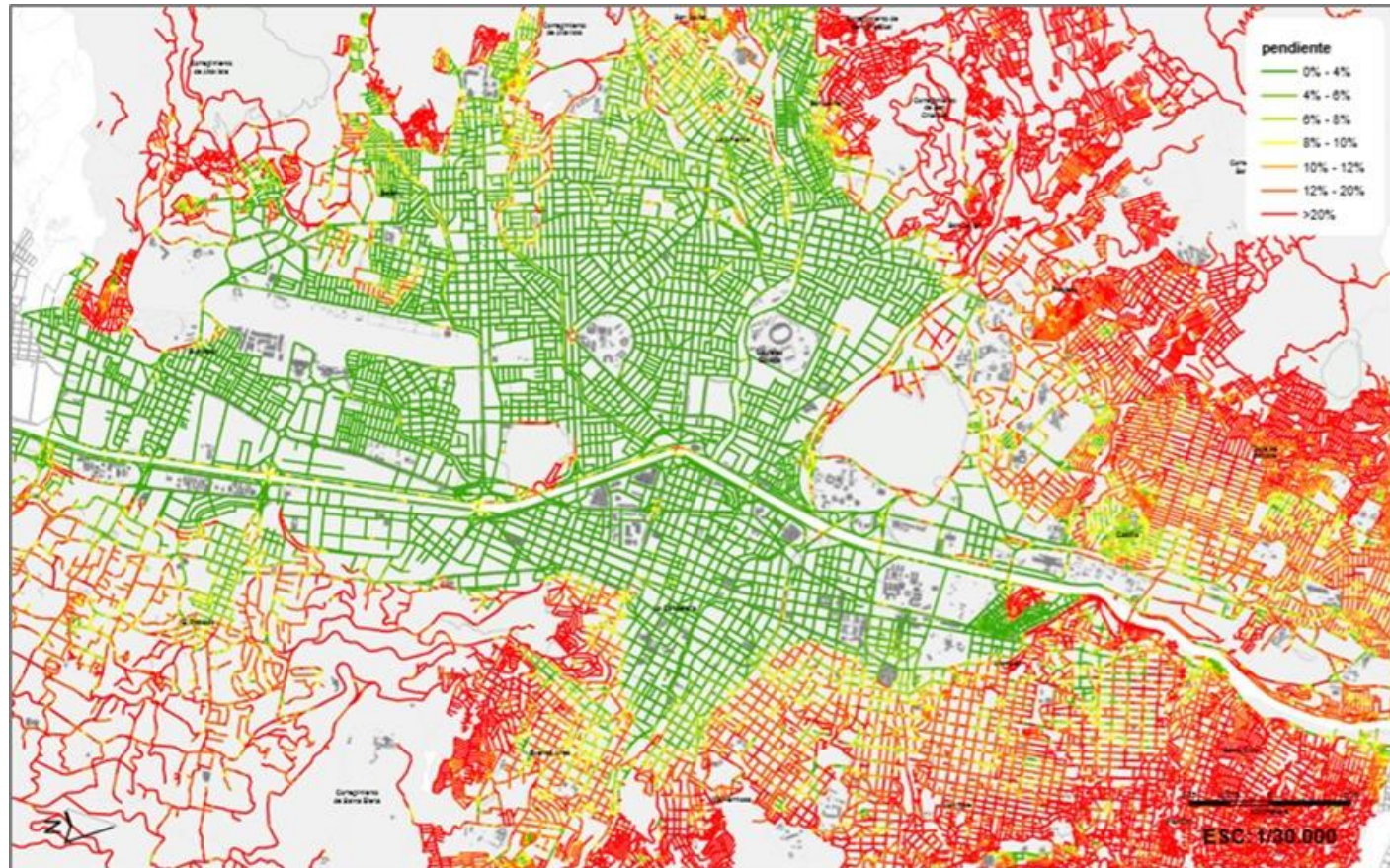
3. MODELLING APPROACH

Mar



4. VARIABLES

Slope



4. VARIABLES

DISTANCE

1 km

1 Mile



2 km

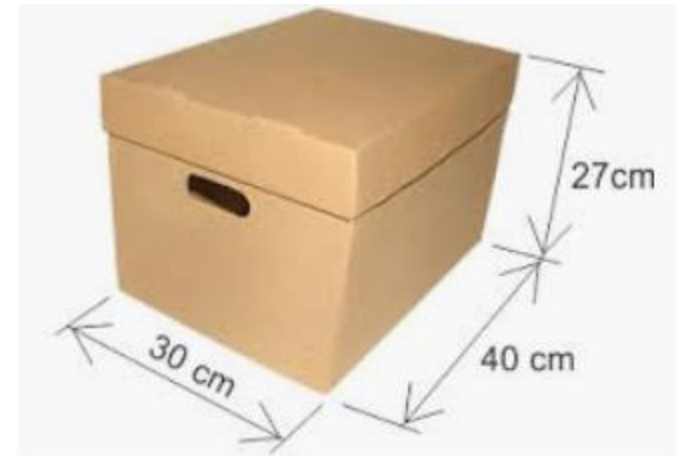


2 Miles



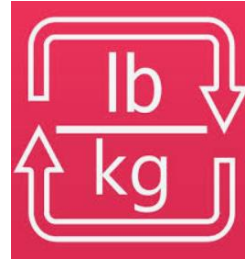
4. VARIABLES

DIMENSIONS



4. VARIABLES

WEIGHT

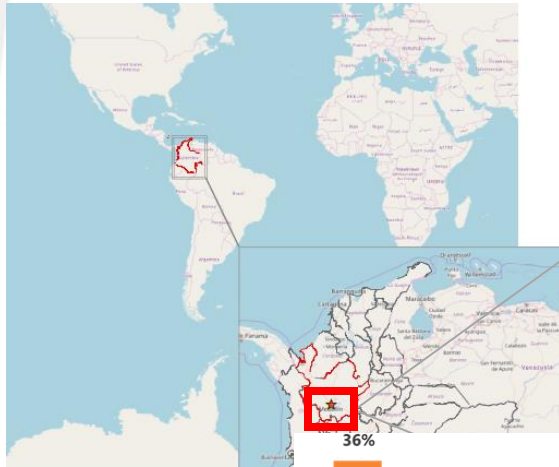


4. VARIABLES

TYPES



5. CASE STUDY: MEDELLIN, COLOMBIA



★ BOGOTÁ
★ MEDELLÍN

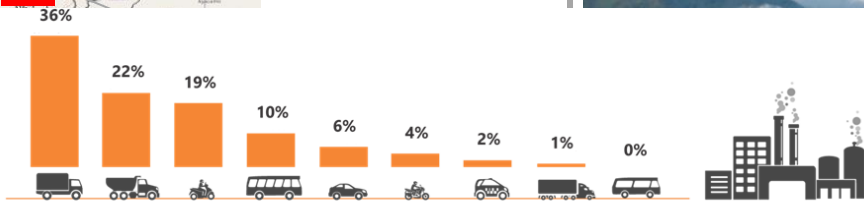
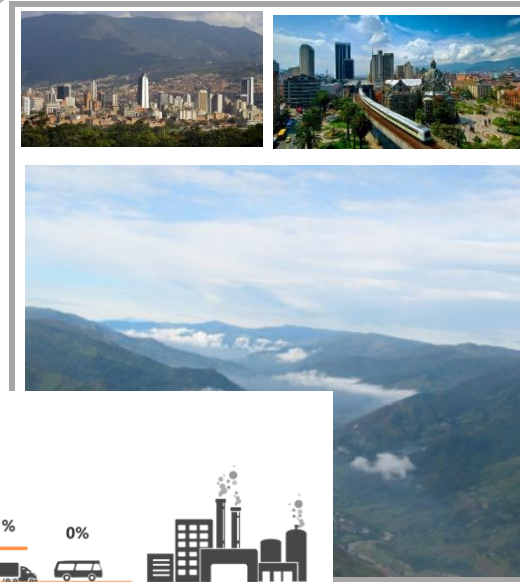
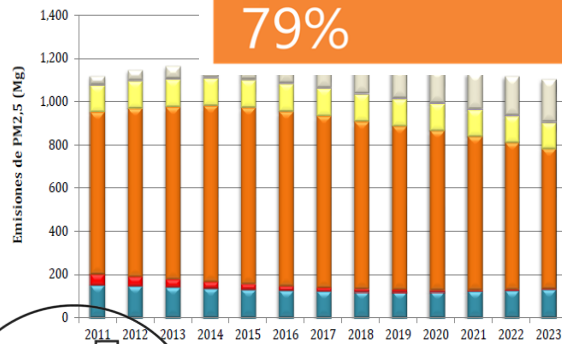
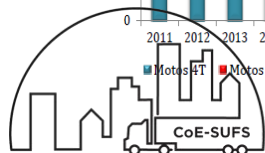
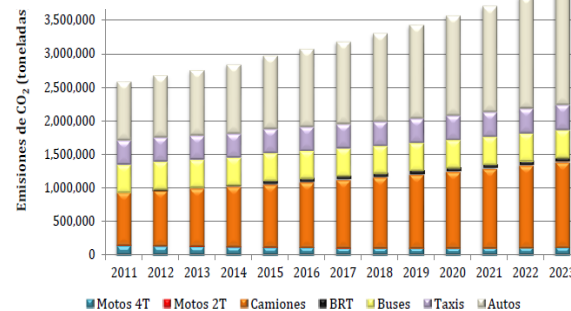


Figura 2.11. Tendencias



periodo 2011-2023



CoE-SUFS
CENTRO DE EXCELENCIA PARA SISTEMAS URBANOS DE FRETE SOSTENIBLES

5. CASE STUDY: MEDELLIN, COLOMBIA

March 2017

Environmental red alert was declared

OPINIÓN ONLINE

“Medellín: SOS por el aire”, por Pablo Montoya

“No permitamos que Medellín se convierta en una pequeña Pekín, en una pequeña Ciudad de México, emblemas de ciudades desmesuradas y malsanas por su contaminación. Ya es hora de que construyamos un movimiento cívico capaz de hacerse oír”.



Medellín le caminó a la emergencia ambiental

Más espacio para peatones, taxis y ciclistas en el primer día de alerta roja por contaminación.



CoE-SUFS
SUSTAINABLE URBAN
FREIGHT SYSTEMS



Declaran alerta roja en Medellín por contaminación del aire

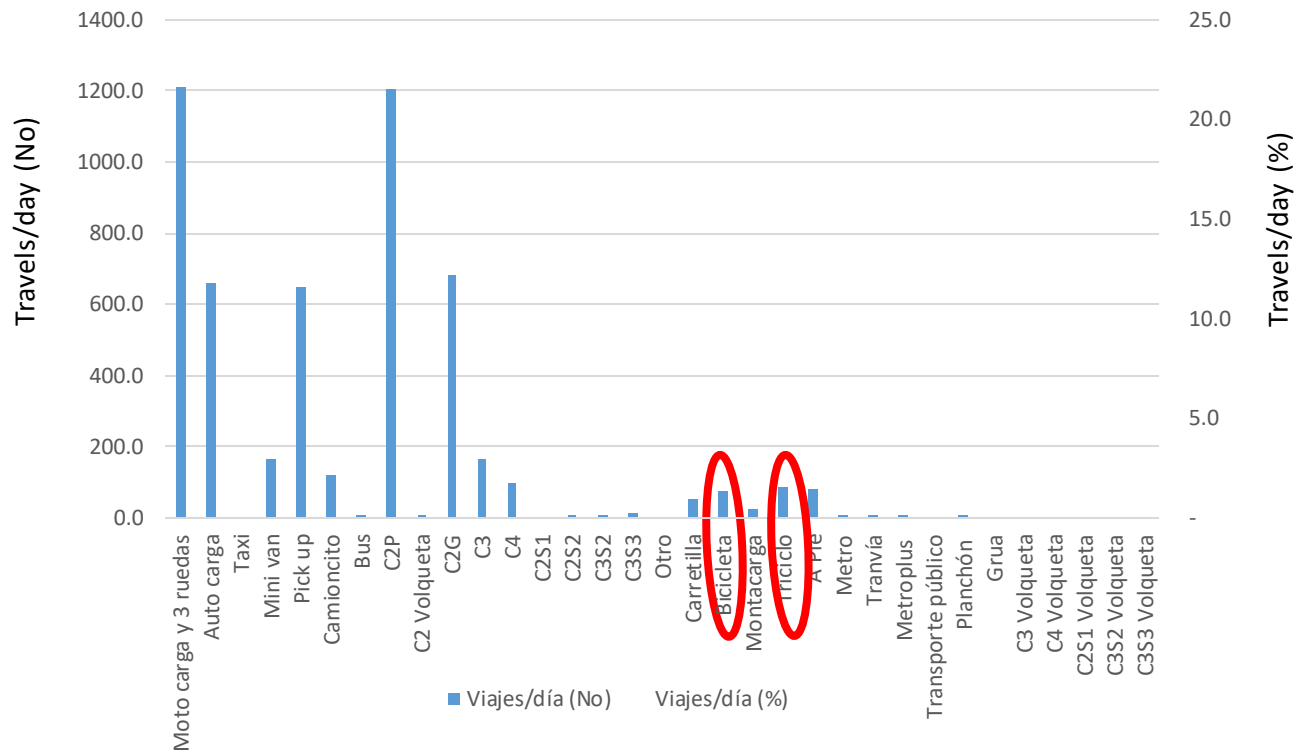
Aumenta la restricción de pico y placa. No podrán circular volquetas y camiones a ciertas horas.



Source: Alcaldía de Medellín (2017)

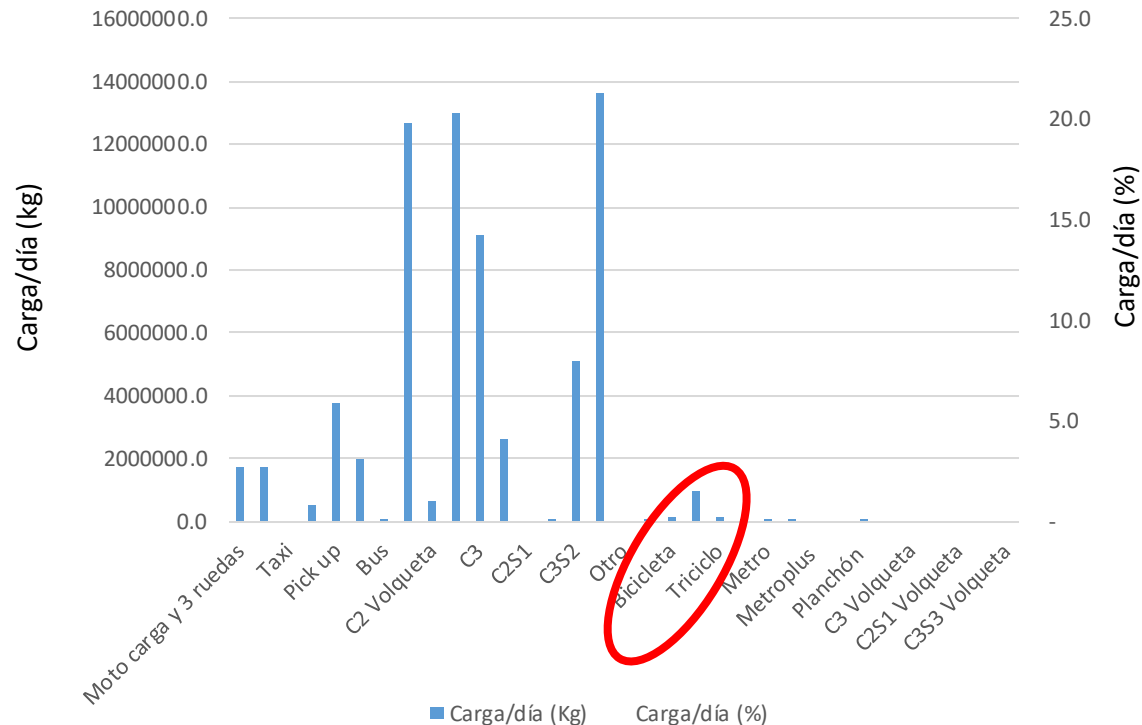
THE USE OF CARGO BIKES: Freight Trips

The use of the bicycle as a mode of transport of cargo is poor used in different cities,
For the city of Medellin: about 5% of the **freight trips** are transported by bicycle

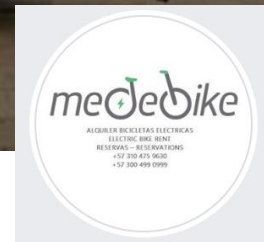


THE USE OF CARGO BIKES: Cargo (Tons)

The use of the bicycle as a mode of transport of cargo is poor used in different cities. For the city of Medellin: about 4% of the cargo (tons) is transported by bicycle



THE USE OF CARGO BIKES



SURVEYS

Surveys are being carried out with Rappi, Servientrega and MedeBike transporters to know the characteristics of the routes. Moreover, the idea is to also know the volume and weight of the goods transported to be able to include the different variables in the models.



PRELIMINARY RESULTS

Bike features (MedeBike)

Average cargo capacity
120 kg

6 owned vehicles

Cost greater than
\$1,455 USD

Assisted pedaling:
Power 750 W

Bike features (Rappi)

Average cargo capacity
18,5 kg

90,6 % owned vehicles

81,3 % Cost less than
\$145 USD

100 % Mechanical pedaling

Travel characteristics

Rappi

- Average travel distance 30 km
- 10 daily deliveries
- Residential areas

MedeBike

- Average travel distance 25 km
- 60 daily deliveries
- Commercial areas



7. CONCLUSIONS AND RECOMMENDATIONS

- This study will allow to conclude if the use of the bicycle as a mode of transport of goods is an applicable alternative for the city of Medellin, identifying the areas and the optimal distances to implement the distribution or collection of cargo in the last mile
- The need to estimate models to represent the delivery of goods through a project that promotes sustainable development through the use of the cargo bicycle as a mode of transport could be beneficial for many cities in the country



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Questions?

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