



**CERTIFICACIÓN DE PROYECTOS DE INVESTIGACIÓN FINANCIADOS POR LOS
FONDOS DE ARRANQUE 2019**

**La suscrita María Martínez Agüero identificada con cedula de Ciudadanía No. 52.078.862 en
calidad de Directora de la Dirección de Investigación e Innovación del Colegio Mayor de
Nuestra Señora del Rosario**

CERTIFICA:

Que el **COLEGIO MAYOR DE NUESTRA SEÑORA DEL ROSARIO**, identificado con NIT. 860.007.759-3, ha seleccionado su proyecto en el marco de la Convocatoria de fondos de arranque, con las siguientes características:

Título de la propuesta financiada	Police & Thieves: geographical crime profiling
Centro de Costo	IV-TFA033
Investigador Principal	Eduardo Ferraz Castelo Branco Ferreira
Tipo de Financiación	Interna
Entidad Financiadora	Colegio Mayor de Nuestra Señora del Rosario

Detalles del proyecto	
Valor total financiado	\$20.000.000
Valor financiado por Fondos Concursables	\$20.000.000
Duración	22 meses
Fecha de inicio	02-03-2020
Fecha entrega informe parcial	14-01-2021
Fecha finalización	14-01-2022
Fecha de entrega informe final	18-01-2022

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C.C. No. 52.078.862

Directora – Dirección de Investigación e Innovación

Colegio Mayor de Nuestra Señora del Rosario
Dirección de Investigación e Innovación

Fondo de arranque: El fondo de arranque tiene como propósito dar un respaldo financiero a las iniciativas de investigación de los profesores de carrera que recién se vinculan a la Universidad. Esto busca a su vez posicionar a la Universidad del Rosario como una institución atractiva para el desarrollo de las carreras de profesores, académicos y científicos por sus políticas de fomento y apoyo a la investigación. La solicitud al fondo debe ser intermediada por el decano de la Unidad Académica a la que pertenece el profesor dentro de los seis meses siguientes a su vinculación a la Universidad. Los recursos disponibles a través de los fondos serán definidos anualmente de acuerdo a las proyecciones y disponibilidades presupuestales para apoyo a la investigación.

1. NOMBRE DE LA PROPUESTA FINANCIADA

Police & Thieves: geographical crime profiling

2. GESTOR DE PROYECTOS

Paula Johanna Vargas Pardo

3. NOMBRE DEL INVESTIGADOR PRINCIPAL

Eduardo Ferraz Castelo Branco Ferreira

4. PLANTEAMIENTO DE LA NECESIDAD Y JUSTIFICACIÓN

It is a well established empirical result on the economics of crime that preventive and punitive measures reduces the incidence of criminal activities (Levitt, 1996; Cook, 2009; Draca and Machin, 2015). In particular, an increase of the size of the police is a possible channel to reduce crime (Levitt, 1997, Evans and Owens, 2007). Two of these works (Di Tella and Shargrotsky, 2004; Klick and Tabarrok, 2005) study the effect of the displacement of police units on the geographical crime profiling. Following the events of terrorist attacks respectively in Buenos Aires and in London, policing in the attacked areas became more intensive. Although crime in these areas dropped after these changes, overall crime in both cities remained constant: the new configuration of police units displaced crimes into regions that became underprotected.

The evidence presented in these works illustrates the importance of considering the spatial allocation of police units as a crucial part of the policing strategy. The probability of catching criminals is indeed an object of equilibrium coming from decisions of where to commit crimes and where to place police units. Indeed, it is typical that more than 50% of the reported crimes in bigger cities occur in less than 5% of the streets — the hot-spots of crime (Weisburd 2005; Co-llazos et al, 2019).

Surprisingly enough, most of the papers dealing with this issue are too stylized. Papers dealing with equilibrium environments (Freeman, Grogger, and Sonstelie, 1996; Lazzati and Menichini, 2016; Algahtany, Kumar, and Barclay, 2017) divide cities into regions and the decisions are made at region- level. They all explain crime across regions, but none of them is able to explain what happens inside of the regions. Some other papers aim at explaining the occurrence of crime at

local-level without equilibrium considerations (Short et al, 2008; Mohler et al, 2011), i.e., in their papers, agents are not necessarily optimizing when they choose where to commit crimes

A well-designed police allocation strategy has an important property in terms of policy. Changing the geographical configuration of the police does not imply a higher level of expenditures in police. Therefore, any reduction on property and violent crime rates (these last ones particularly costly to the society) under a new distribution of police units is highly cost-effective.

5. DETALLE DELAS ACTIVIDADES A FINANCIAR

There are two main source of costs for this project. The first one is related to the development of the theoretical model. This project is coauthored with Ian Flint, a specialist on point processes with publications on the best journals of mathematics and engineering currently working at the University of Melbourne. Therefore, I intend whether to visit Flint or to receive him at Rosario for 3 months.

I would also like to hire a Joven Investigador in order to help me gathering necessary data for the project, specifically, data on crime and police locations of cities, topography, price of apartment (to use as a proxy of wealth in each region), demographics and public expenditures.

6. ALCANCE TIEMPO Y COSTO

CONCEPTO	OBJETIVOS	CRITERIO DE ÉXITO
1. Alcance	<p>This study aims at developing a framework (both theoretical and empirical) able to perform a positive analysis of the geographic crime profiling as well as make policy-recommendations. These are the main questions of this project:</p> <ol style="list-style-type: none"> 1. How does crime respond to the spatial distribution of police units? 2. How does policy units should be placed in order to reduce crime? 3. If police is not optimally allocated, what could explain its current allocation (for example, are there more police in richer areas by political reasons)? 4. What does make a region prone to have more crime (for example, proximity of a poorer area with a richer one)? 	Cumplir con el objetivo del proyecto en los tiempos y con los recursos asignados.
2. Tiempo	22 meses	Desarrollar el proyecto en el tiempo estimado
3. Costo financiado por el Fondo Concur-sable	\$20.000.000	Ejecutar el valor asignado en el tiempo establecido.

El investigador se compromete a ejecutar en los tiempos acordados y a notificar cualquier eventualidad que se presente en esta ejecución a la Dirección de Investigación e innovación por medio del gestor de proyectos asignado

7. DEFINICIÓN DE REQUERIMIENTOS DE LA PROPUESTA

Fases del Proyecto que requieren financiación	TOTAL
Personal	\$11.454.545
Equipos Nuevos	\$0
Servicios Técnicos	\$8.000.000
Viajes y viáticos	\$0
Materiales y Suministros	\$0
Material Bibliográfico	\$0
Talleres	\$0
Imprevistos (3% del total)	\$545.455
TOTAL	\$20.000.000

The costs for the visit includes flight tickets and accommodations which I estimate around 8-10 million COP. The costs for hiring the Joven Investigador are estimated in 10-12 million COP.

8. PRINCIPALES AMENAZAS DE LA PROPUESTA (RIESGOS NEGATIVOS).

I am not sure if I will be able to access a dataset of police location to test the theoretical model. Even in the worst-case scenario, this research will produce a high-quality paper (in this scenario, a theoretical one).

9. PRINCIPALES OPORTUNIDADES DE LA PROPUESTA (RIESGOS POSITIVOS).

Until this moment, no paper in the literature has dealt with this problem in the rich environment I am proposing. In addition, barely no research using police location was made. In the case we are able to find data on police location, the main opportunities are related to discover and explore new patterns that are unknown to the literature to produce other papers. In the case we do not find a dataset on police location, I expect, with my paper, to increase the demand for such datasets which could increase the supply of them.

10. CRONOGRAMA DE HITOS DE LA PROPUESTA.

	FECHA INICIO	FECHA FIN
Research of datasets and theoretical methodology	03/2020	04/2020
Full development of a theoretical model	05/2020	07/2020
Collection and analysis of data applied to the model	08/2020	03/2021
Redaction of the article	04/2021	12/2021

11. RESULTADOS			
	FECHA INICIO	FECHA FIN	
I will produce a policy-oriented paper containing an original framework modelling criminal and police decisions by point processes. The appropriateness of the models will be tested using available data on crime and police locations.	03/2020	12/2021	
12. RESPONSABLES			
NOMBRE	FUNCIÓN	FECHA	Firma
Eduardo Ferraz Castelo Branco Ferreira	Investigador principal	02-03-2019	<i>Eduardo Ferraz</i>
Paula Johanna Vargas Pardo	Gestor de proyectos	02-03-2019	<i>Paula Varga</i>