

“Crime in the city”: an analysis of the connections between  
crime, urban scale, and urban centrality

*Marco Dugato*\*

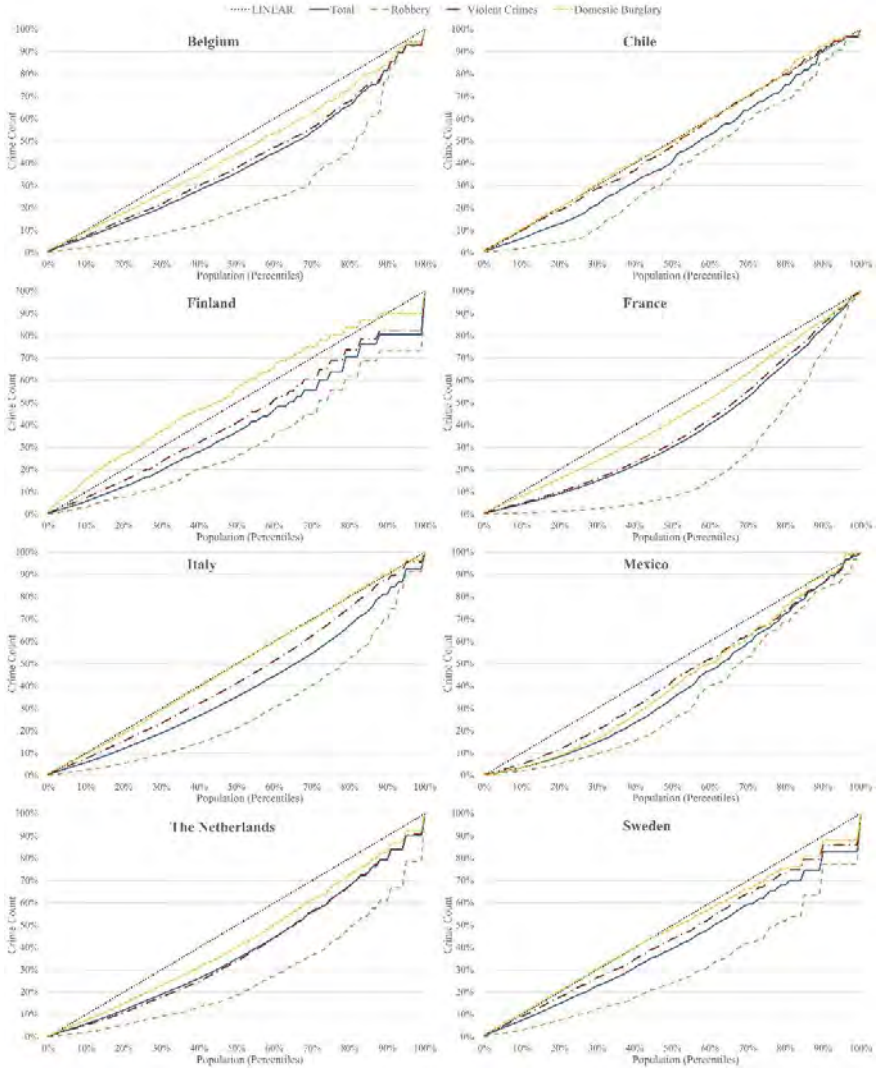
**Supplementary materials**

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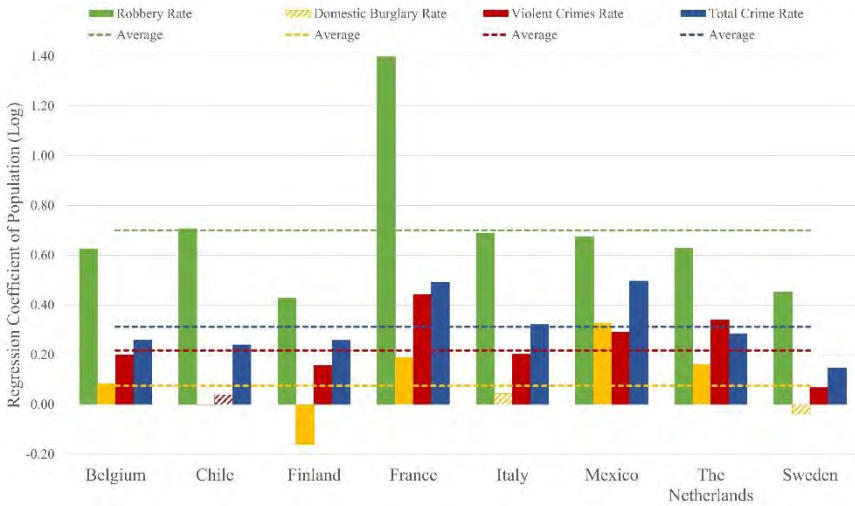
# “Crime in the city”

Fig. 1 - Lorenz curves of the connections between crimes and population according to the size of the settlements in 2015



Source: Author's elaboration

Fig. 2 - Coefficients of the linear regression between crime rates (logged) and population percentiles according to the size of the settlements (logged) in 2015



*Dashed bars:  $p \geq 0.05$*

Source: Author's elaboration

Tab. 1 - Negative binomial regression models between 2015 crime rates and indicators of urban scale and centrality in the Italian municipalities. Independent variables are mean centred. Coefficients for controls variables are not reported. (N= 8,015)

		Urban scale models	Urban centrality models	Full models	Full models with interactions
		IRR	IRR	IRR	IRR
Total crime	Population (10,000 inh.)	1.019***	-	1.003	1.021**
	Population Density	1.002**	-	1.002**	1.001
	Percentage In-coming	-	1.009***	1.009***	1.009***
	Percentage Out-coming	-	0.984***	0.984***	0.985***
	Population#In-coming	-	-	-	0.999
	Population#Out-coming	-	-	-	1.001*
	Constant	139.214***	137.549***	139.001***	140.576***
	<i>Alpha (ln)</i>	-1.231***	-1.351***	-1.352**	-1.353***
Violent crime	Population (10,000 inh.)	1.025***	-	1.003	1.043
	Population Density	1.009***	-	1.009***	1.007**
	Percentage In-coming	-	1.008***	1.007***	1.007***
	Percentage Out-coming	-	0.982***	0.983***	0.984***
	Population#In-coming	-	-	-	1.000
	Population#Out-coming	-	-	-	1.002
	Constant	6.672***	6.400***	6.653***	6.761***
	<i>Alpha (ln)</i>	0.548***	0.529***	0.527***	0.526***
Robbery	Population (10,000 inh.)	1.070***	-	1.038**	1.211***
	Population Density	1.019***	-	1.018***	1.009
	Percentage In-coming	-	1.010***	1.010***	1.010***
	Percentage Out-coming	-	0.981***	0.988***	0.994
	Population#In-coming	-	-	-	0.998*
	Population#Out-coming	-	-	-	1.007***
	Constant	0.947	0.897***	0.929**	0.984
	<i>Alpha (ln)</i>	1.419***	1.419***	1.407***	1.402***
Domestic burglary	Population (10,000 inh.)	1.000	-	1.002	1.028
	Population Density	1.000	-	0.998	0.996*
	Percentage In-coming	-	0.999	0.999	0.999
	Percentage Out-coming	-	1.003**	1.003**	1.004***
	Population#In-coming	-	-	-	0.999
	Population#Out-coming	-	-	-	1.001
	Constant	14.191***	14.290***	14.291***	14.401***
	<i>Alpha (ln)</i>	-0.011	-0.012	-0.012	-0.013

\*  $p \leq 0.1$ ; \*\*  $p \leq 0.05$ ; \*\*\*  $p \leq 0.01$

Source: Author's elaboration

Tab. 2 - Rate change in robbery rates associated with one unit change in the percentage of out-coming or in-coming population by municipalities of different size

	Population of the municipality (inhabitants)							
	500	1,000	5,000	7,554 average	15,000	30,000	60,000	100,000
<b>+1% in out-coming population</b>	-0.49% 0.49%	-0.46% 0.46%	-0.18% 0.18%	0.00%	<b>0.52%</b>	<b>1.58%</b>	<b>3.73%</b>	<b>6.66%</b>
<b>+1% in in-coming population</b>	<b>1.14%</b>	<b>1.13%</b>	<b>1.05%</b>	<b>1.00%</b>	<b>0.85%</b>	<b>0.55%</b>	-0.05%	-0.85%

Positive values in bold

Source: Author's elaboration

Tab. 3 - Negative binomial regression models between 2015 total crime rates and indicators of urban scale and centrality in the Italian municipalities by Macro Area. Independent variables are mean centred

		North-West	North-East	Centre	South & Islands	
		IRR	IRR	IRR	IRR	
Total crime	Population (10,000 inh.)	1.048**	1.033	1.014	1.020	
	Population Density	0.997	1.001	1.015**	1.000	
	Percentage In-coming	1.008***	1.011***	1.010***	1.009***	
	Percentage Out-coming	0.986***	0.983***	0.981***	0.987***	
	Population#In-coming	1.000	1.000	1.000	1.000	
	Population#Out-coming	1.002**	1.001	1.001	1.001	
	<i>Controls</i>					
	Total crime rate (LAG)	1.002***	1.002***	1.002***	1.003***	
	Per capita Income	1.007	1.003	1.015*	1.015**	
	Percentage Foreigners	1.528***	1.729***	1.640***	2.468***	
	Percentage Low Education	0.163***	0.435***	0.276***	0.503***	
	Constant	173.959***	124.961**	139.033**	129.323**	
	<i>Alpha (ln)</i>	-1.156***	-1.543***	-1.883***	-1.409***	
	<i>N</i>	3,035	1,450	975	2,555	

\*  $p \leq 0.1$ ; \*\*  $p \leq 0.05$ ; \*\*\*  $p \leq 0.01$

Source: Author's elaboration