

Safety in the Global South: criminal victimization in Brazilian rural areas

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Although less than 16% of the Brazilian population lives in rural areas today as a result of urbanization, this population is also experiencing an increase in violence.

Crime trends



The homicide rate in Brazil was around 29 per 100,000 people in 2012, the highest rate in more than twenty years.



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- ▶ The data are random and has national coverage.



Victimization, Brazil, 1988 and 2009 (%)

Crime	1988	2009	% Δ
(1) Theft or robbery	5.44	7.32	34.5
(2) Attempted theft/robbery	1.63	5.36	228.8
(3) Assault	1.03	1.55	50.4
(4) Property crimes – (1) or (2)	6.40	9.18	43.4

Source: 1988 and 2009 PNAD, IBGE.

Theft



Robbery



Assault



Understanding or definition of rural in Brazil

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- ▶ The Brazilian Institute for Geography and Statistics (IBGE) defines a rural area as a space within a city outside its urban perimeter.
- ▶ Another rural dimension is the environmental one, which is related to farming activity, including landscapes with preserved areas and ecological reserves.



People living in rural and rural areas (%), Brazil, 2010

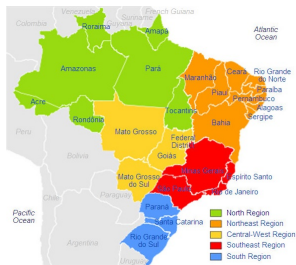


Source: Brazilian Institute for Geography and Statistics – IBGE.

People who felt secure, Brazil, 2009 (%)

Region	Rural			Urban		
	Home	Neighb.	City	Home	Neighb.	City
North	80.07	74.91	62.84	69.20	55.61	44.20
Northeast	85.41	80.02	68.78	76.34	60.74	44.97
Mid-West	84.79	81.92	68.18	74.66	62.15	52.36
Southeast	84.27	81.32	71.30	78.69	66.62	49.94
South	84.74	83.26	73.13	81.34	70.49	57.93
Brazil	84.47	80.38	69.34	77.54	64.66	49.69

Source: 2009 PNAD, IBGE.



People using safety devices to protect themselves, Brazil, 2009 (%)

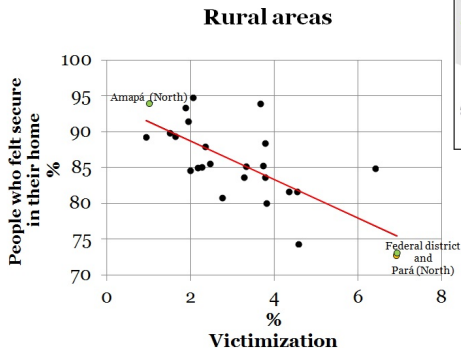
Region	Area	Additional locks	Window bars	Alarms	Dogs
North	Rural	9.84	7.46	1.72	17.58
	Urban	23.64	40.61	15.79	12.99
Northeast	Rural	6.64	4.80	2.26	9.75
	Urban	20.07	39.42	17.86	7.63
Mid-West	Rural	4.88	17.49	4.86	23.10
	Urban	18.91	44.68	25.27	14.80
Southeast	Rural	8.75	13.46	5.88	12.61
	Urban	18.06	42.89	22.61	8.44
South	Rural	7.17	6.60	4.87	18.90
	Urban	23.73	34.61	23.24	12.72
Brazil	Rural	7.41	7.88	3.52	13.36
	Urban	19.82	40.83	21.28	9.67

Source: 2009 PNAD, IBGE.

Feeling of security v.s feeling of insecurity



Feeling of security v.s victimization, Brazilian rural areas, 2009



Victimization, Brazil, 2009 (%)

Region	Area	Theft or robbery	Assault	Attempted theft/robb.
North	Rural	5.28	1.38	4.08
	Urban	11.43	2.02	7.96
Northeast	Rural	2.56	1.01	1.74
	Urban	9.31	2.10	6.22
Mid-West	Rural	3.28	0.91	2.18
	Urban	9.47	1.75	7.27
Southeast	Rural	2.88	0.88	2.27
	Urban	6.97	1.39	5.26
South	Rural	3.31	0.88	2.03
	Urban	7.56	1.55	6.10
Brazil	Rural	3.05	0.99	2.14
	Urban	8.11	1.65	5.95
	Total	7.32	1.55	5.36

Source: 2009 PNAD, IBGE.

Growth rate of victimization (%), Brazil, 1988-2009

Region	Area	%Δ 1988-2009		
		Theft or robbery	Assault	Attempted theft/robb.
North ⁽¹⁾	Urbano	64.7	57.8	332.6
Northeast	Rural	-0.4	159.0	228.3
	Urban	68.1	90.9	281.6
Mid-West	Rural	25.2	71.7	246.0
	Urban	46.4	62.0	139.9
Southeast	Rural	23.1	54.4	320.4
	Urban	9.8	16.8	160.4
South	Rural	5.8	23.9	275.9
	Urban	0.1	10.7	199.0
Brazil	Rural	16.0	94.1	296.3
	Urban	27.1	37.5	197.5
	Total	34.5	50.4	228.8

Source: 1988 and 2009 PNAD, IBGE.

(1) The 1988 PNAD does not cover rural areas in the North.

Victimization rate (%) conditional on individual characteristics in rural, Brazil, 2009

Characteristics		Theft or robbery	Assault	Attempted Theft/robb.
Skin color	White	3.07	0.84	2.32
	Non-white	3.03	1.08	2.03
Gender	Man	3.98	1.09	2.77
	Woman	2.03	0.88	1.45
Age groups	10 – 14	0.78	1.09	0.42
	15 – 24	2.36	1.20	1.75
	25 – 34	3.33	1.51	2.56
	35 – 49	3.75	0.86	2.56
	50 – 64	4.13	0.74	2.94
	65 or +	3.66	0.23	2.30
Total		3.05	0.99	2.14

Source: 2009 PNAD, IBGE.

Victimization models: probit regression

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- ▶ The response variable of the models is binary:

$$\text{victim}_i = \begin{cases} 1, & \text{if individual } i \text{ was victimized} \\ 0, & \text{otherwise} \end{cases}.$$

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$$\begin{aligned} \Pr(\text{victim}_i = 1) = \Phi(\beta_0 + \beta_1 \text{man}_i + \beta_2 \text{white}_i + \beta_3 \text{famsize}_i \\ + \beta_4 \text{ownvehi}_i + \beta_5 \text{married}_i + \beta_6 \text{age}_i \\ + \beta_7 \text{agesq}_i + \beta_8 \text{school}_i + \beta_9 \ln(\text{income})_i \\ + \beta_{10} \text{student}_i + \beta_{11} \text{hwork}_i). \end{aligned}$$

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For the **assault** the dummy variable **works** was used instead of **hworks**, and the variable **house** was included for all models estimated using urban data.

Victimization models: data and samples

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- ▶ The sample was made up of 48,859 individuals living in Brazilian rural areas in 2009.
- ▶ We also estimated a urban victimization model using 269,998 observations.

Empirical evidences: individual-level predictors of victimization

Variable	Area	Theft	Robbery	Attempted theft/robb.	Property crimes	Assault
man	Rural	+	+	+	+	+
	Urban	+	+	+	+	+
white	Rural	ns	ns	-	-	ns
	Urban	ns	-	ns	-	ns
famsize	Rural	-	-	-	-	-
	Urban	-	-	-	-	-
ownvehi	Rural	ns	ns	-	ns	-
	Urban	ns	-	-	-	-
married	Rural	-	-	-	-	-
	Urban	-	-	-	-	-
age	Rural	+	+	+	+	+
	Urban	+	+	+	+	+
agesq	Rural	-	-	-	-	-
	Urban	-	-	-	-	-

Note: ns = non-significant at 10%.

Empirical evidences: individual-level predictors of victimization (continued)

Continued.

Variable	Area	Theft	Robbery	Attempted theft/robb.	Property crimes	Assault
school	Rural	+	+	+	+	-
	Urban	+	+	+	+	-
ln(income)	Rural	+	+	+	+	ns
	Urban	+	+	+	+	-
student	Rural	ns	+	ns	+	ns
	Urban	+	ns	ns	+	-
hwork	Rural	+	+	+	+	
	Urban	+	+	+	+	
works	Rural					ns
	Urban					+

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Concluding remarks

We found that:

- ▶ the violence is on the rise not only in urban areas of the country, but also in rural ones.
- ▶ there is significant relationship between victimization in rural areas and individual-level characteristics, especially those of a socioeconomic nature.
- ▶ the individual-level predictors of victimization act similarly in rural and urban areas in Brazil.