

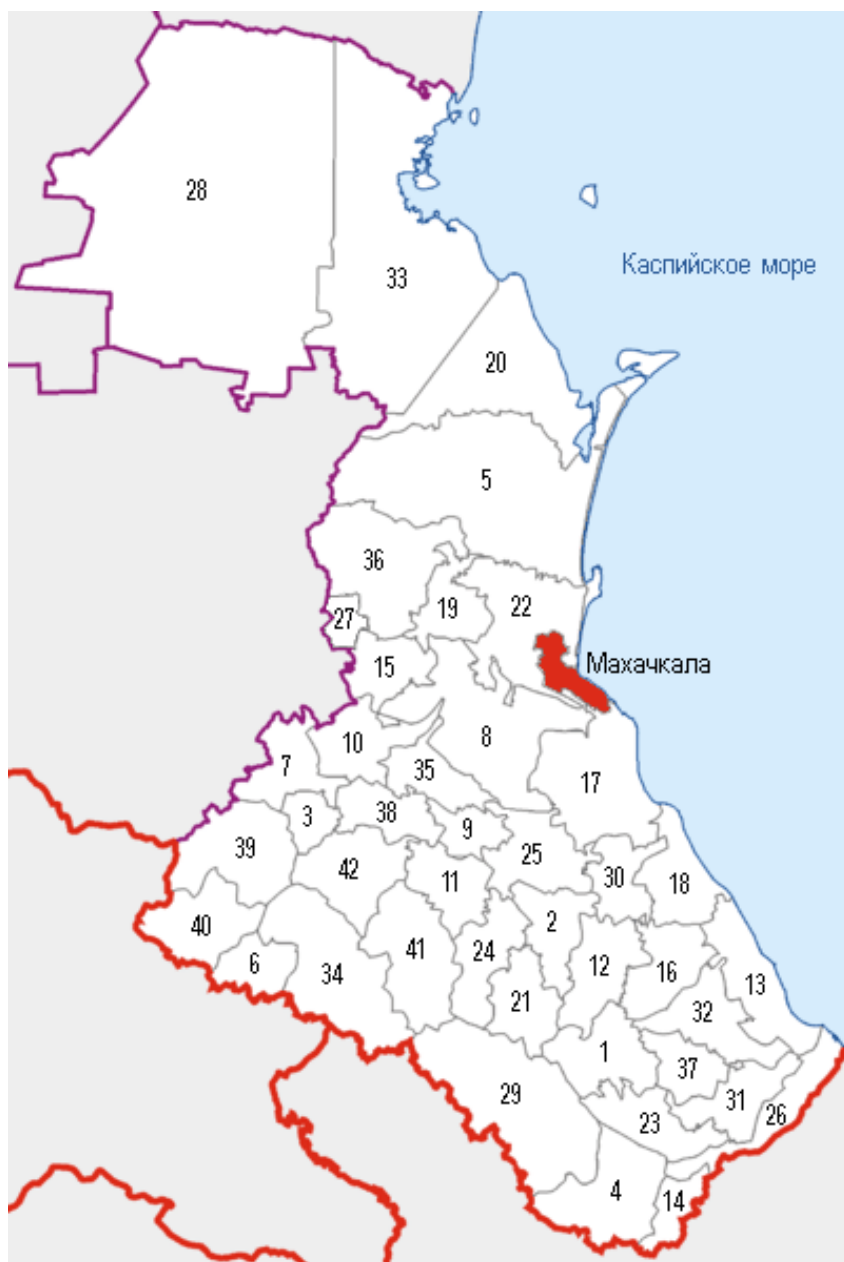
**Land, Votes and Violence:
Political Effects of the Insecurity of
Property Rights Over Land in
Dagestan**

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Map of the Districts of Dagestan²



Note:

1	Agul	22	Kumtorkala
2	Akushi	32	Kurah
3	Ahvah	24	Lak
4	Ahty	25	Levashi
5	Babayrt	26	Magaramkent
6	Bezhta ³	27	Novolak
7	Botlih	28	Nogai
8	Buinaksk	29	Rutul
9	Gergebil	30	Sergokala
10	Gumbet	31	Suleiman-Stal'sky
11	Gunib	32	Tabasaran
12	Dahadaev	33	Tarumovsky
13	Derbent	34	Tlarata
14	Dokuzpara	35	Untsukl
15	Kazbek	36	Khasavyurt
16	Kaitag	37	Khiv
17	Karabudahkent	38	Khunzah
18	Kajakent	39	Tsumada
19	Kizilurt	40	Tsunta
20	Kizlar	41	Charoda
21	Kuli	42	Shamilsky

²Source: http://ru.wikipedia.org/wiki/%D0%A4%D0%B0%D0%B9%D0%BB:Dagestan_districts_map.gif

³ Bezhtinskiy uchastok (region) is autonomous region within Tsunta District; therefore the total number of districts of Dagestan is 41.

Figure 1. A Graphical Model of the Main Hypothesis that that

The weaker is security of property rights over land, the more intensive are electoral competition and violence.

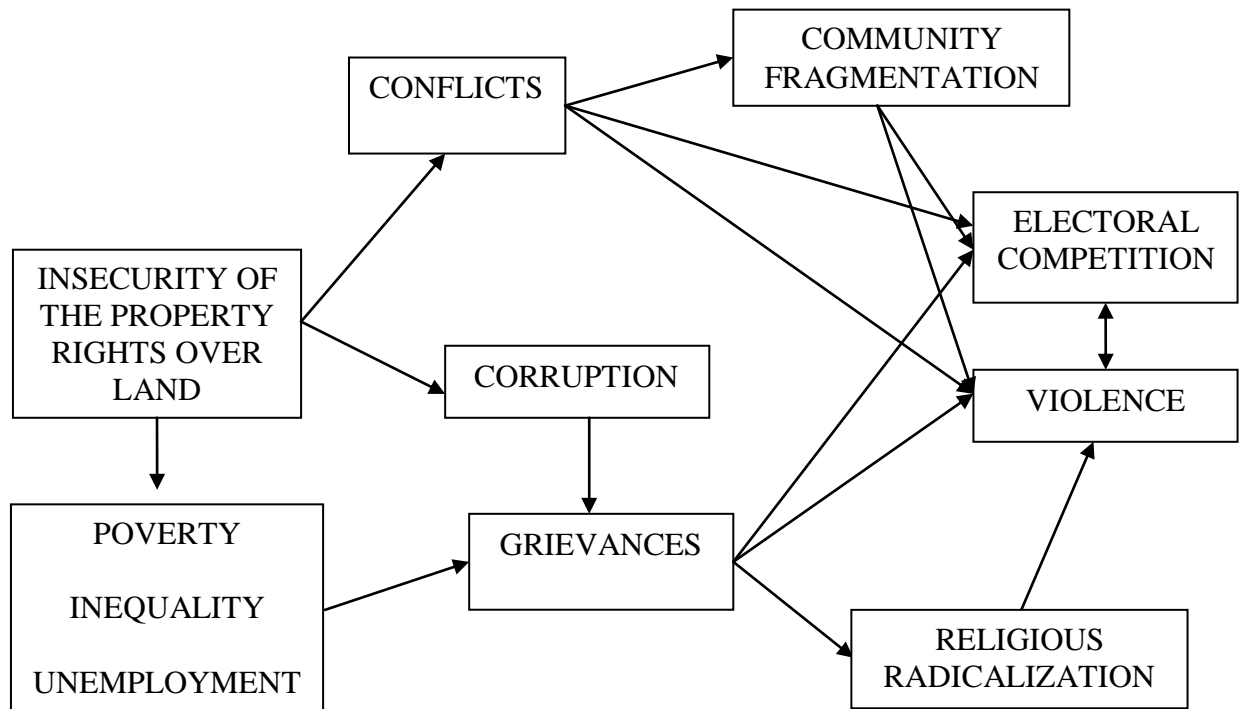


Figure 1. A Graphical Model of the Alternative Hypothesis that that

The weaker is security of property rights over land, the less intensive are electoral competition and violence.

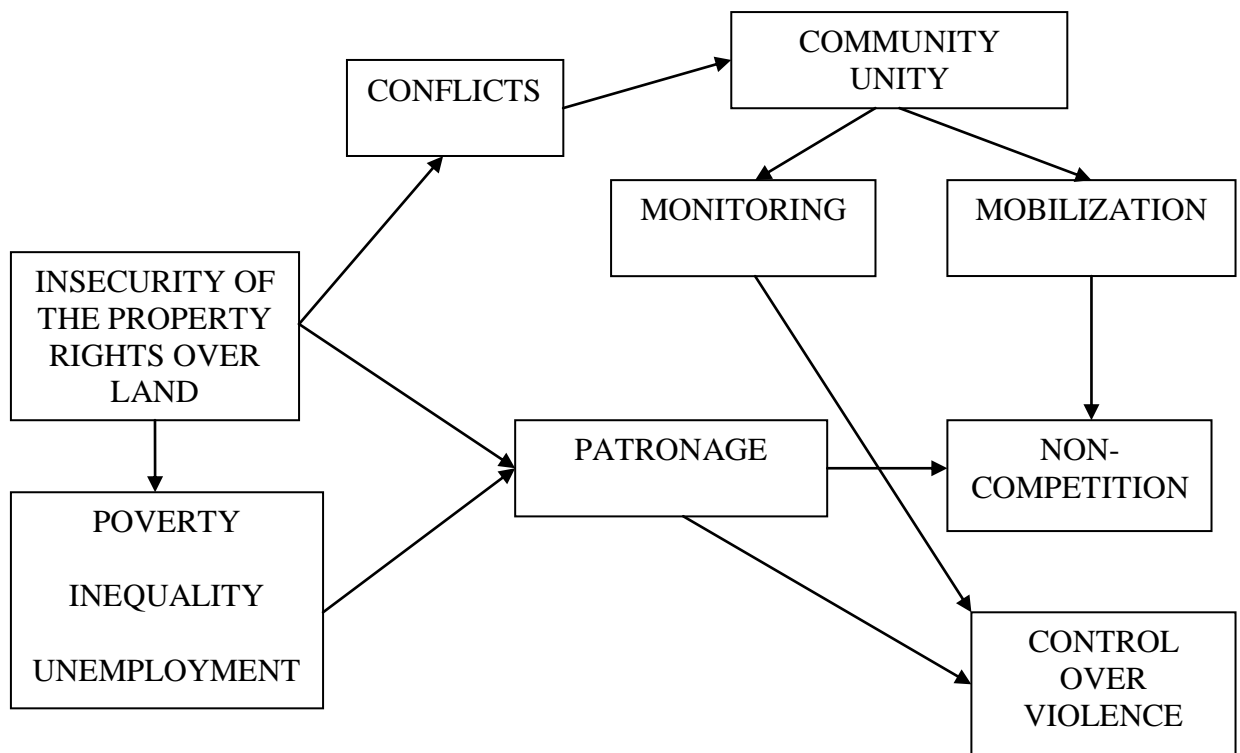


Table 1. Core Variables

Variable	Measure	Source
Electoral Competition	Vote margin – difference in the result of the winner and second candidate on elections.	Russian Central Electoral Commission Website
Violence	Incidents of terrorist attacks, counterterrorist operations of law enforcement agencies, political assassinations; and ethnic conflicts and acts of communal violence for the period from January, 1, 2003 to July, 1, 2011.	Caucasian Knot database “Dagestan: Chronicle of Violence; 1996- 2011”
Security of property rights over land	percentage of untenured land that represents difference between total amounts of agricultural land on 01.01.1989 – the late Soviet period, when all land was in collective ownership and land tenured with long-term contracts on 01. 01. 2003	State Archive of the Republic of Dagestan
Income	Municipal income per capita	Russian Federation Federal State Statistics Service (ROSSTAT)
Inequality	large profitable agricultural firms to the total number of them in the structure of municipal economy	ROSSTAT
Population	Total number of people	All-Russian census 2002
Population increase	Difference between total population in 2002 and 1989	All-Russian censuses of 1989 and 2002
Ethnolinguistic Fractionalization (ELF)	Probability that two randomly selected individuals in a district will belong to the same ethnic group	All-Russian census 2002
Terrain	3- Mountain Region; 2- for foothill; 1- lowland	Municipal Statistics of the Republic of Dagestan
Distance from capital (Makhachkala)	Distance in kilometers	Municipal Statistics of the Republic of Dagestan
Chechnya Border	1 – has border with Chechnya; 0 – has not	Map of Dagestan

Table 2. OLS Regression Analysis of the Factors of Electoral (Non-) Competition

Explanatory Variables	Model 1 Coefficients (Standard Errors)	Model 2 Coefficients (Standard Errors)	Model 3 Coefficients (Standard Errors)
<i>PRSecurity</i>	0,504*** (0,128)	0,452*** (0,134)	0,456*** (0,146)
<i>Income</i>	-	0,096 (0,452)	0,189 (0,163)
<i>Inequality</i>	-	0,420*** (0,235)	0,293** (0,25)
<i>Subsidies</i>	-	-	-0,167 (0,00)
<i>Population2002</i>	-	-	0,471** (0,00)
<i>ELF</i>	-	-	0,076 (0,275)
R2	0,254	0,445	0,595
Adjusted R2	0,233	0,398	0,519
N	41	41	41

Note: *p<.10, ** p<.05, ***p<.01

Table 3. OLS Regression Analysis of the Factors of Violence (logged)

Explanatory Variables	Model 1 Coefficients (Standard Errors)	Model 2 Coefficients (Standard Errors)	Model 3 Coefficients (Standard Errors)
<i>PRSecurity</i>	0,417*** (0,08)	0,384*** (0,04)	0,389*** (0,03)
<i>Income</i>	-	-0,16 (0,912)	0,060 (0,00)
<i>Inequality</i>	-	0,317** (0,04)	0,162 (0,03)
<i>Subsidies</i>	-	-	-0,175 (0,00)
<i>Population2002</i>	-	-	0,051 (0,00)
<i>PopulationIncrease</i>	-	-	0,626** (0,00)
<i>ELF</i>	-	-	0,013 (0,297)
<i>Distance</i>	-	-	-0,177 (0,01)
<i>Terrain</i>	-	-	0,155 (0,05)
<i>Chechnya</i>	-	-	0,216** (0,11)
R2	0,184	0,282	0,584
Adjusted R2	0,162	0,240	0,447
N	41	41	41

Note: *p<.10, ** p<.05, ***p<.01

Table 4. Negative Binomial Regression Analysis of the Factors of Violence

Explanatory Variables	Coefficients (St. Errors)	Wald Chi-Square (Degrees of freedom)
<i>PRSecurity</i>	0,033** (0,01)	4,571 (1)
<i>Income</i>	0,017 (0,00)	1,164 (1)
<i>Inequality</i>	0,096 (0,03)	0,690 (1)
<i>Subsidies</i>	0,054 (0,21)	0,196 (1)
<i>Population2002</i>	-0,06 (0,24)	0,08 (1)
<i>PopulationIncrease</i>	0,233** (0,08)	1,311 (1)
<i>ELF</i>	-0,147 (0,9)	0,036 (1)
<i>Distance</i>	-0,03 (0,036)	0,493 (1)
<i>Terrain</i>	-0,654 (1,25)	0,349 (2)
<i>ChechnyaBorder</i>	0,13* (0,16)	0,819 (1)

Note: N= 41; Log-likelihood = 20,657; *p<.10, ** p<.05, ***p<.01;