Public Policy for the Poor? A Randomized Evaluation of the Mexican Universal Health Insurance Program

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Joint work with Emmanuela Gakidou, Kosuke Imai, Jason Lakin, Ryan T. Moore, Clayon Nall, Nirmala Ravishankar, Manett Vargas, Martha María Téllez-Rojo, Juan Eugenio Hernández Ávila, Mauricio Hernández Ávila, Héctor Hernández Llamas

(Talk at Harvard School of Public Health, 5/6/2009)

Project References

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- Gary King et al., A 'Politically Robust' Experimental Design for Public Policy Evaluation, with Application to the Mexican Universal Health Insurance Program *Journal of Policy Analysis and Management*, January 2007.

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  - uses data far more efficiently to find effects and save money

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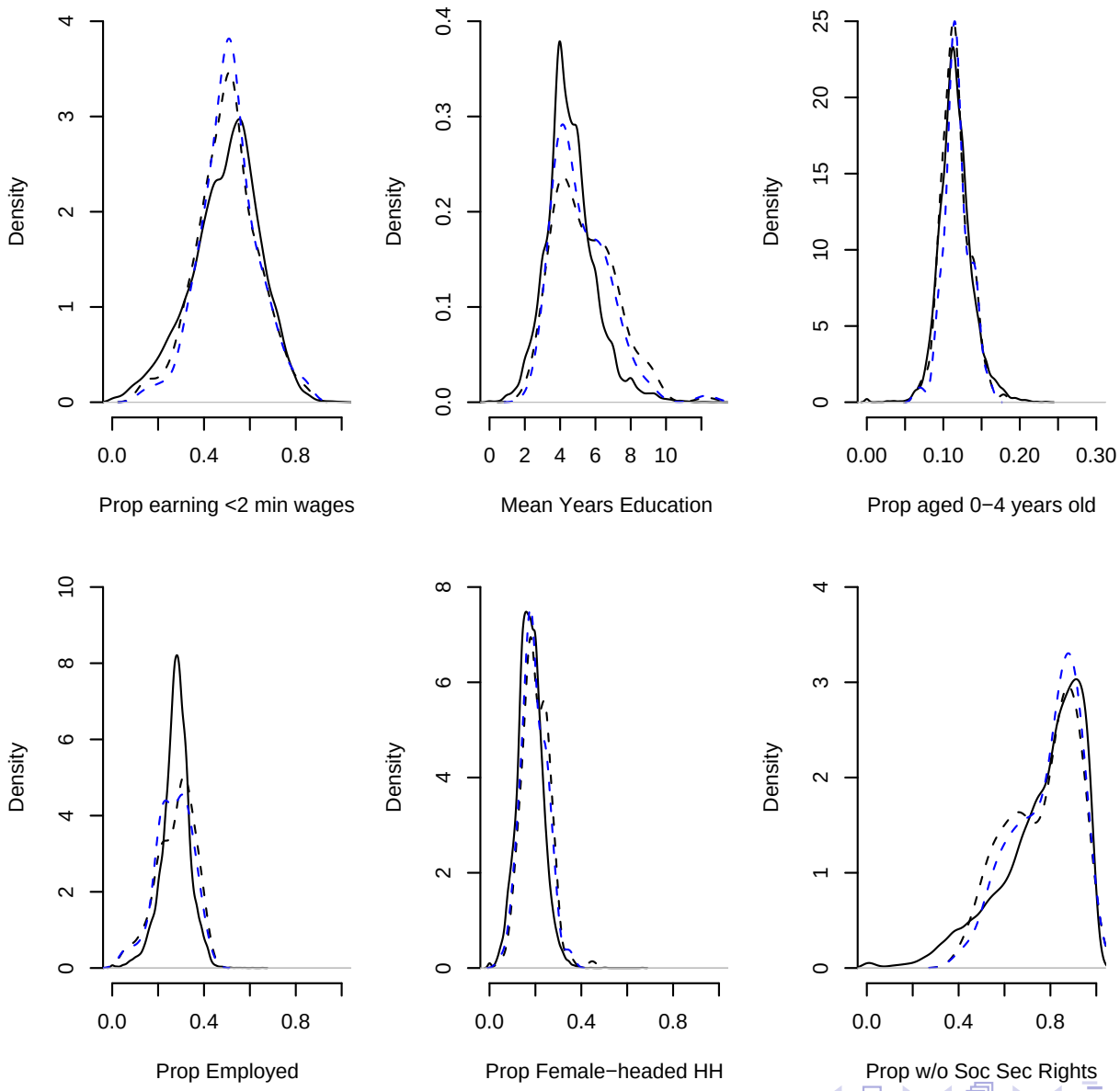
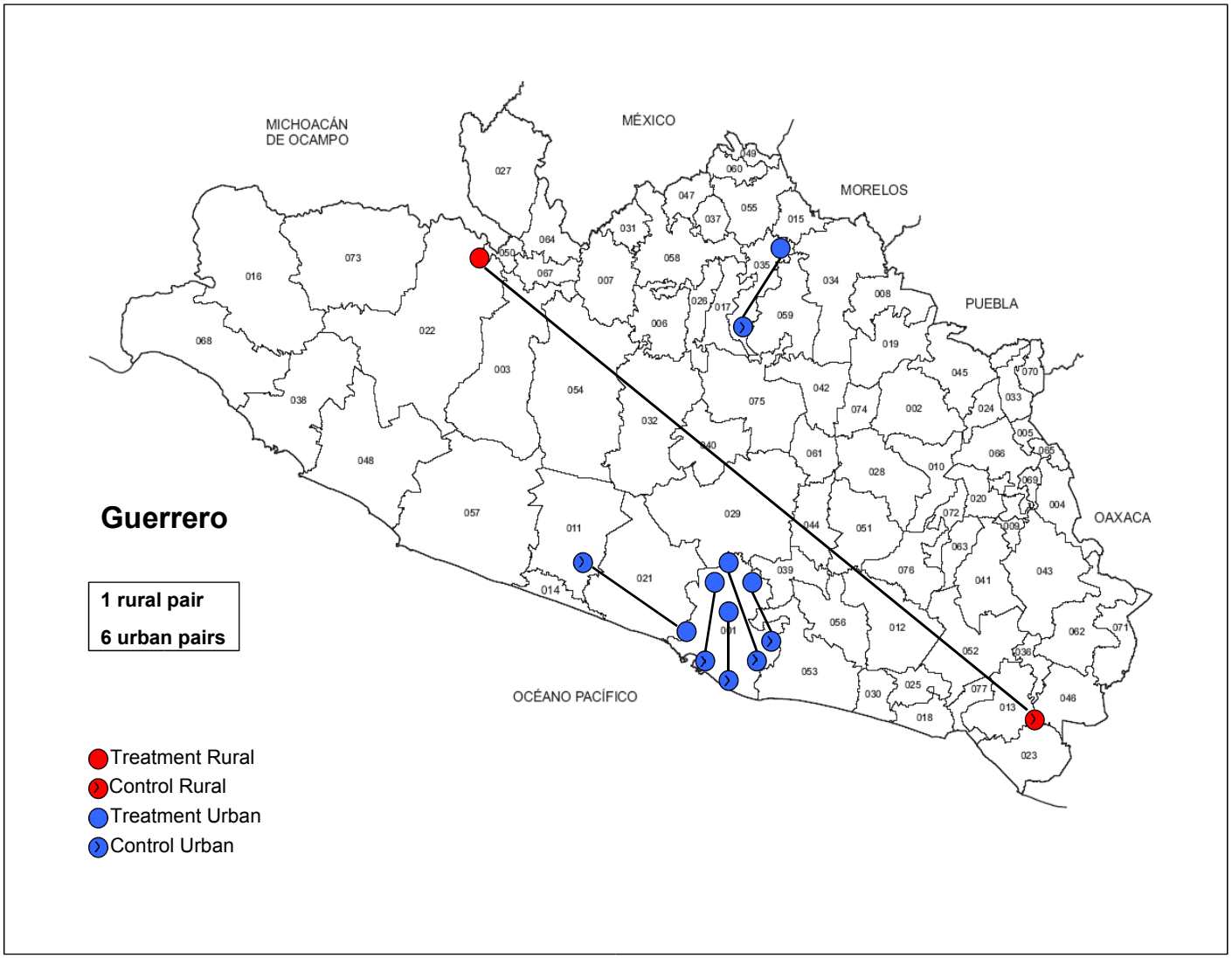
- Imai-King-Nall: prove above results and offer simple estimators for MPDs making minimal assumptions for both intent to treat and complier average treatment effects

Remaining in study: 148 clusters (74 pairs) in 7 states

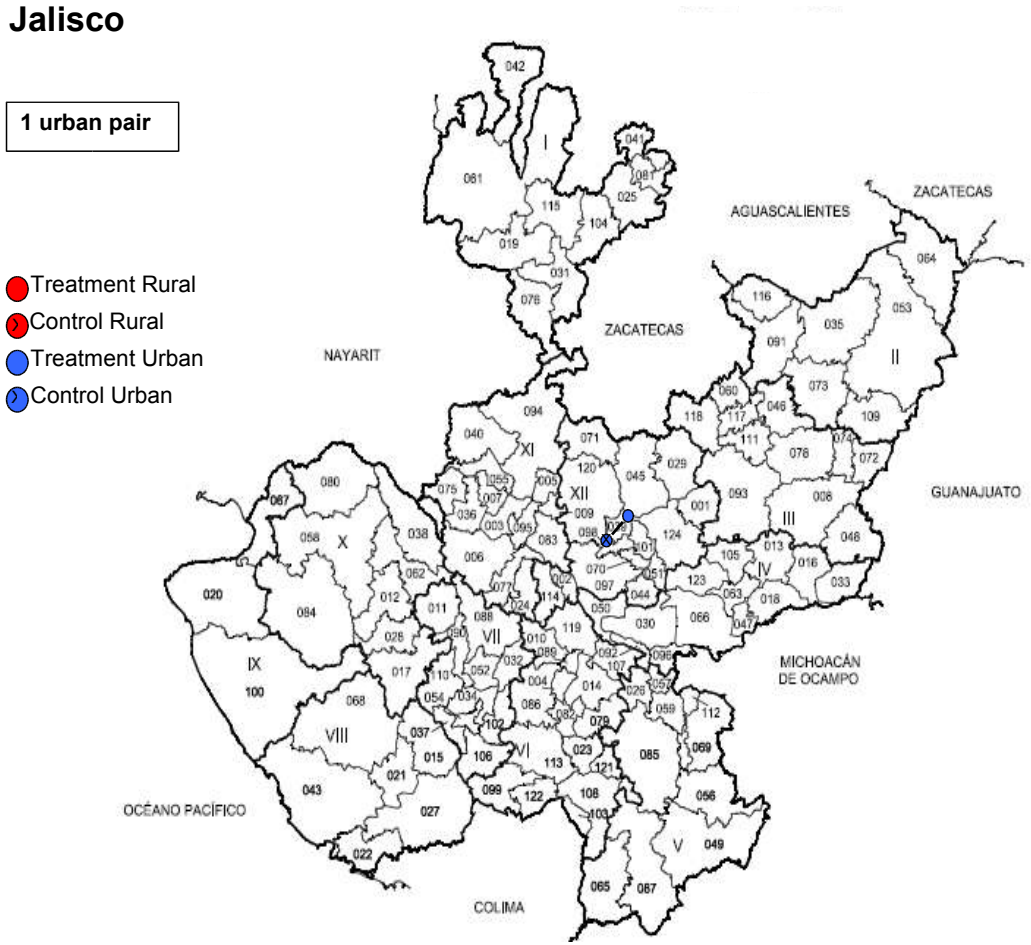
Clusters are Representative On Measured Variables



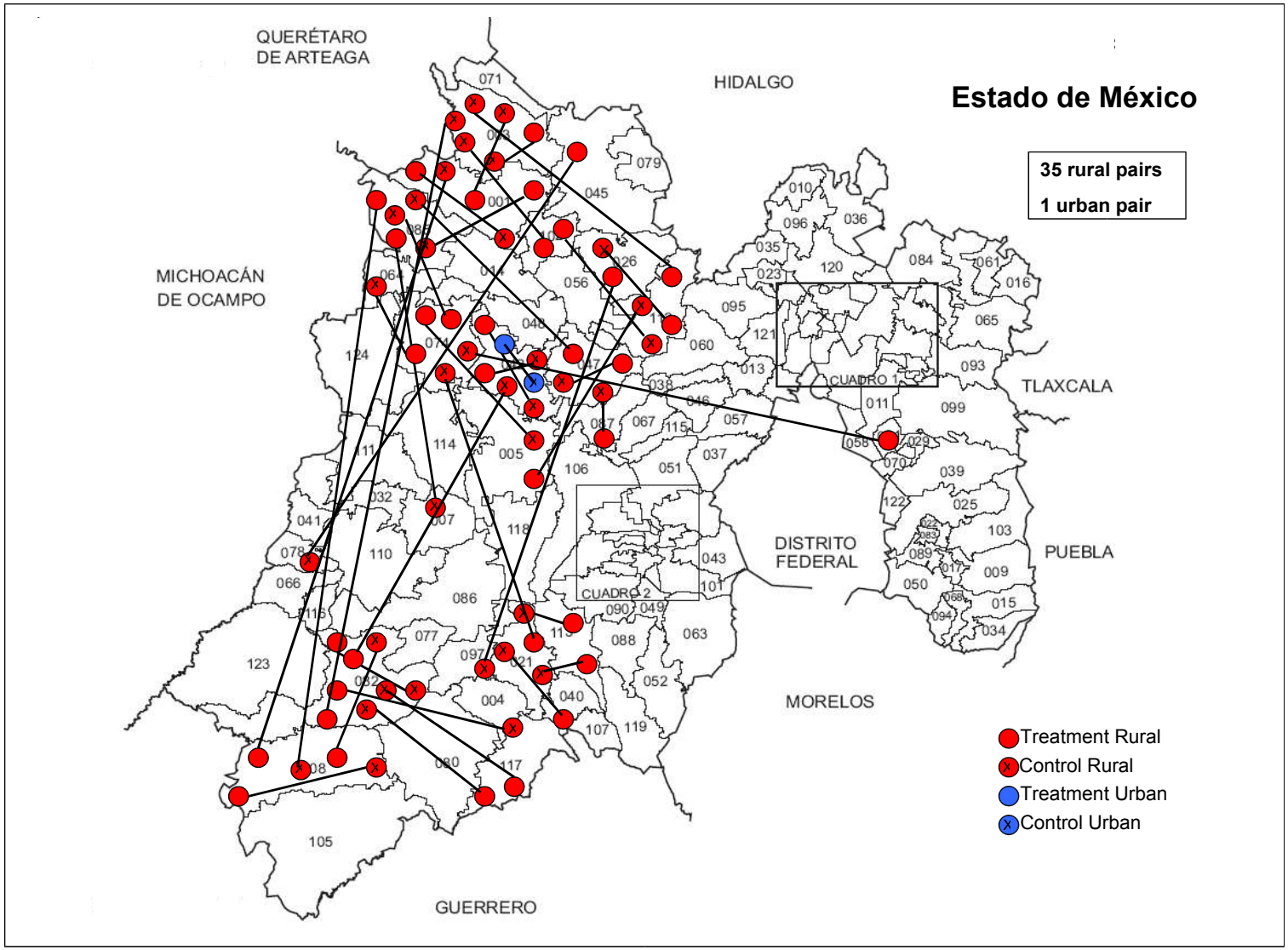
Matched Pairs, Guerrero



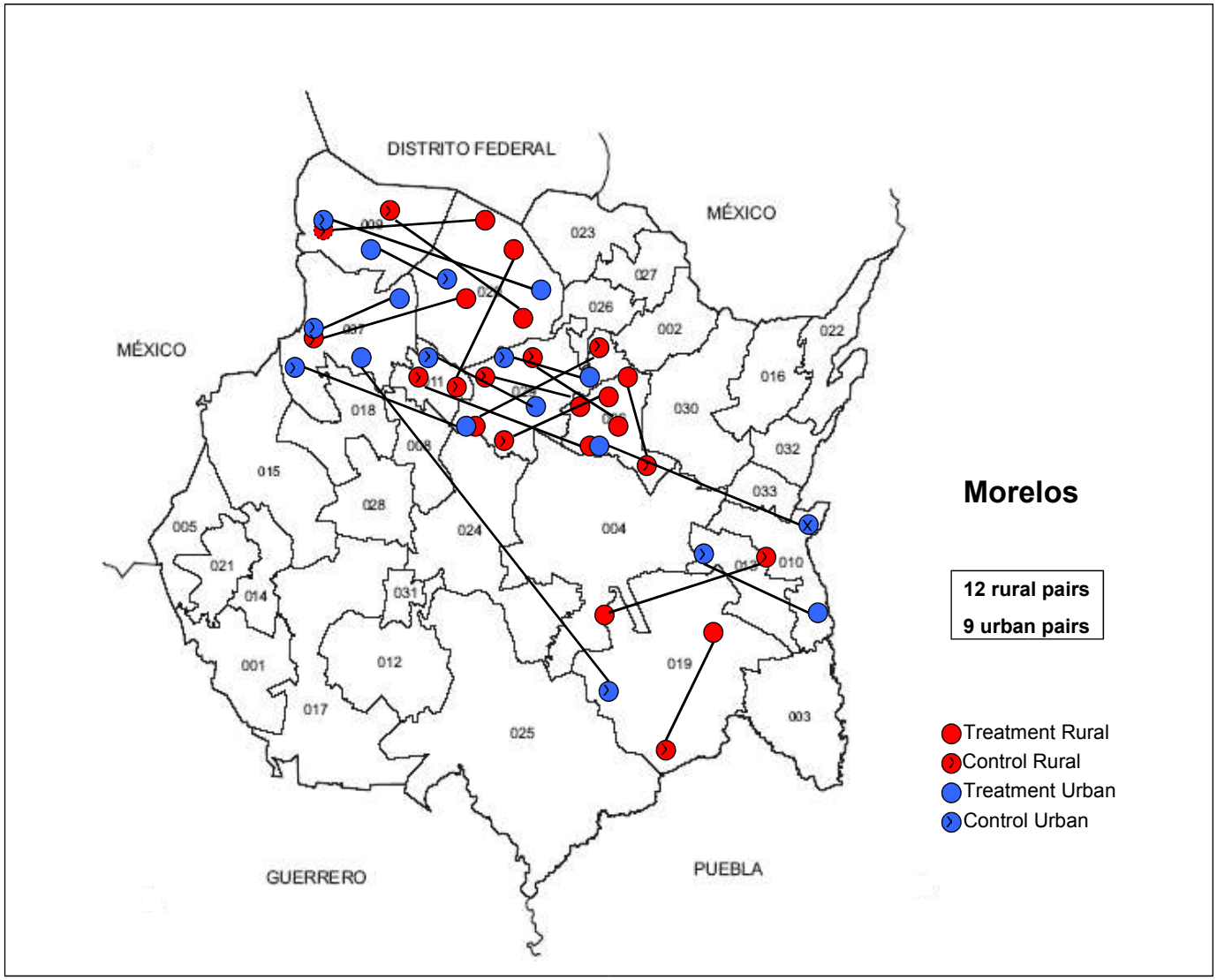
Matched Pairs, Jalisco



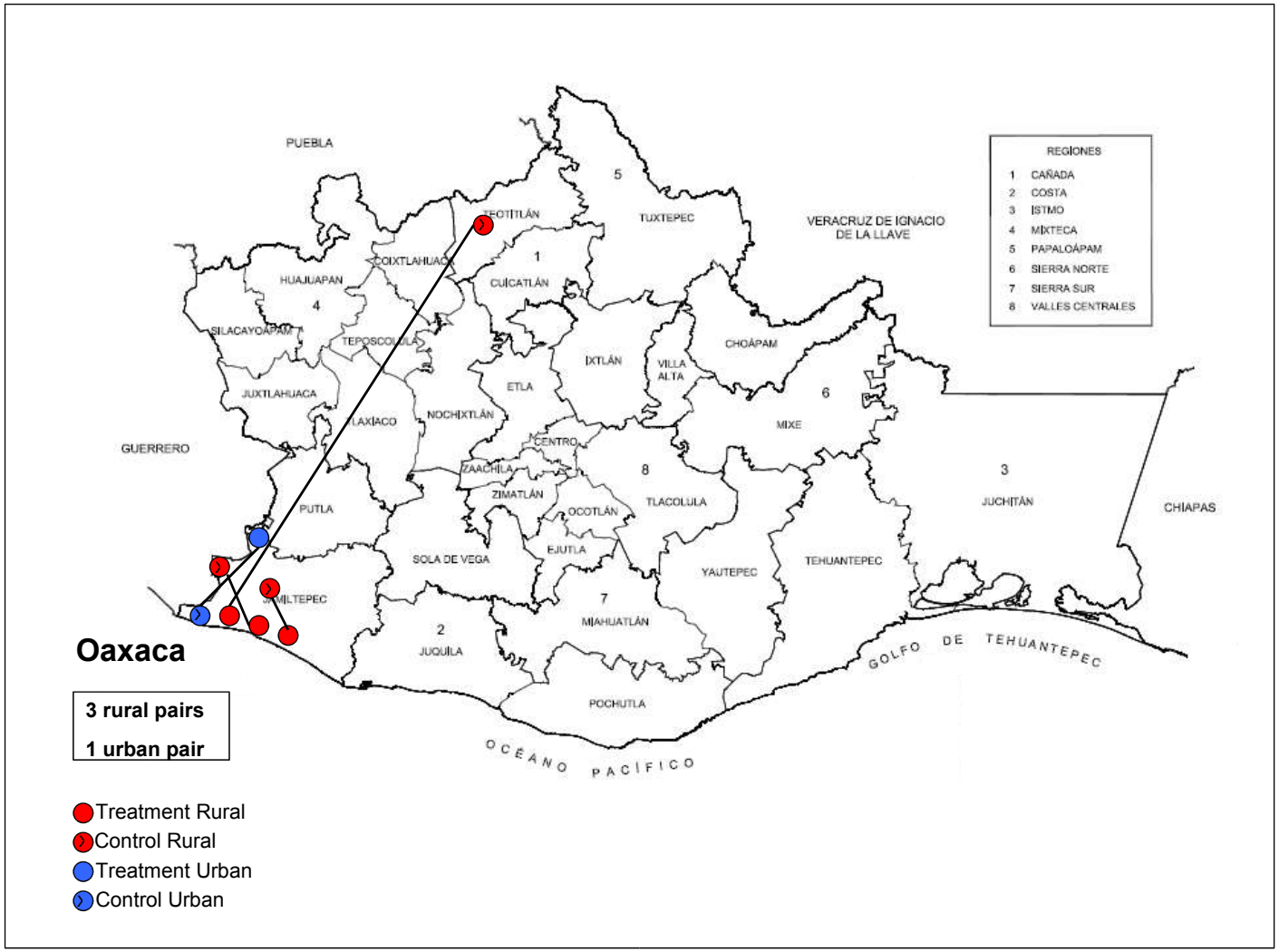
Matched Pairs, Estado de México



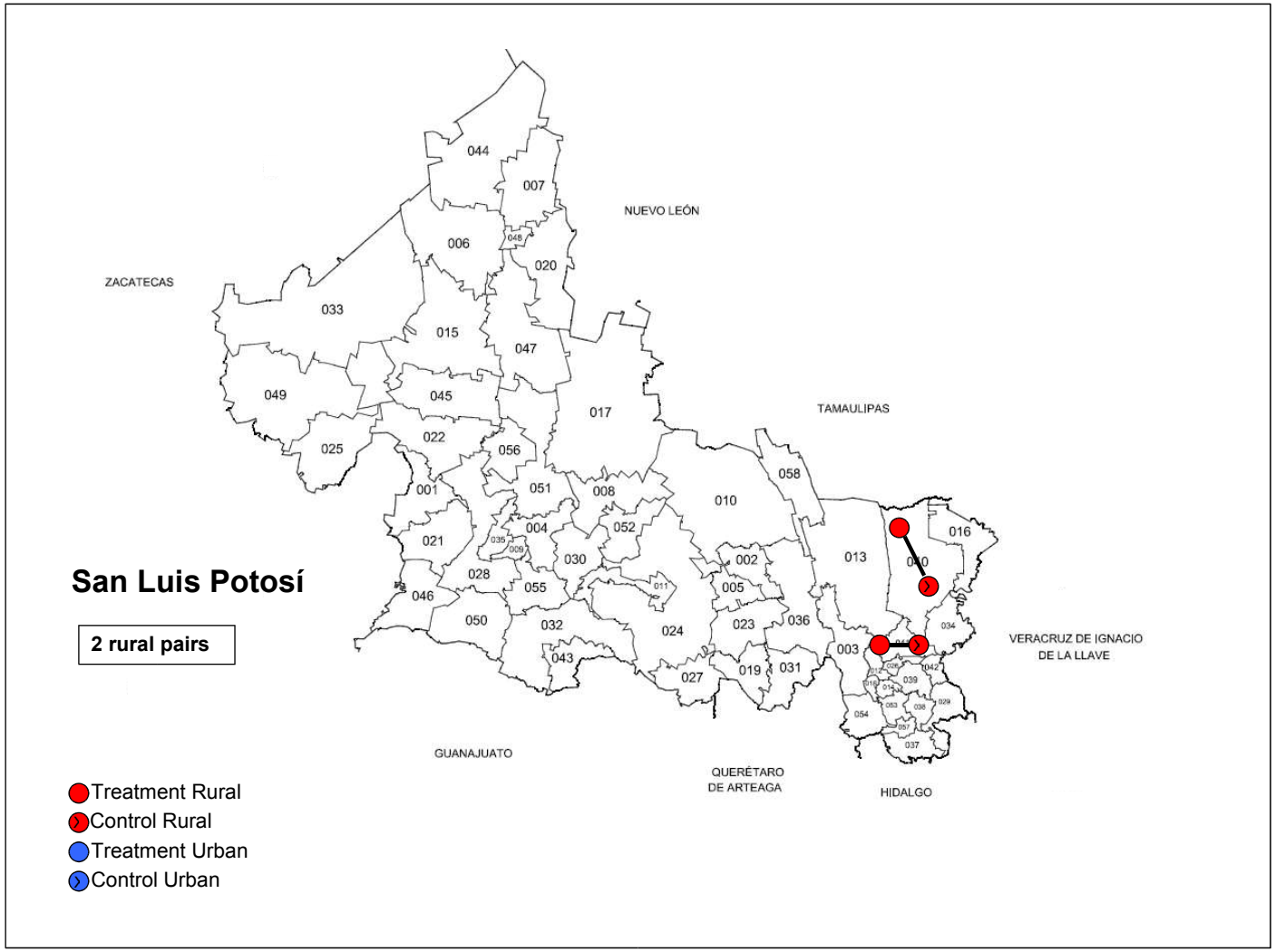
Matched Pairs, Morelos



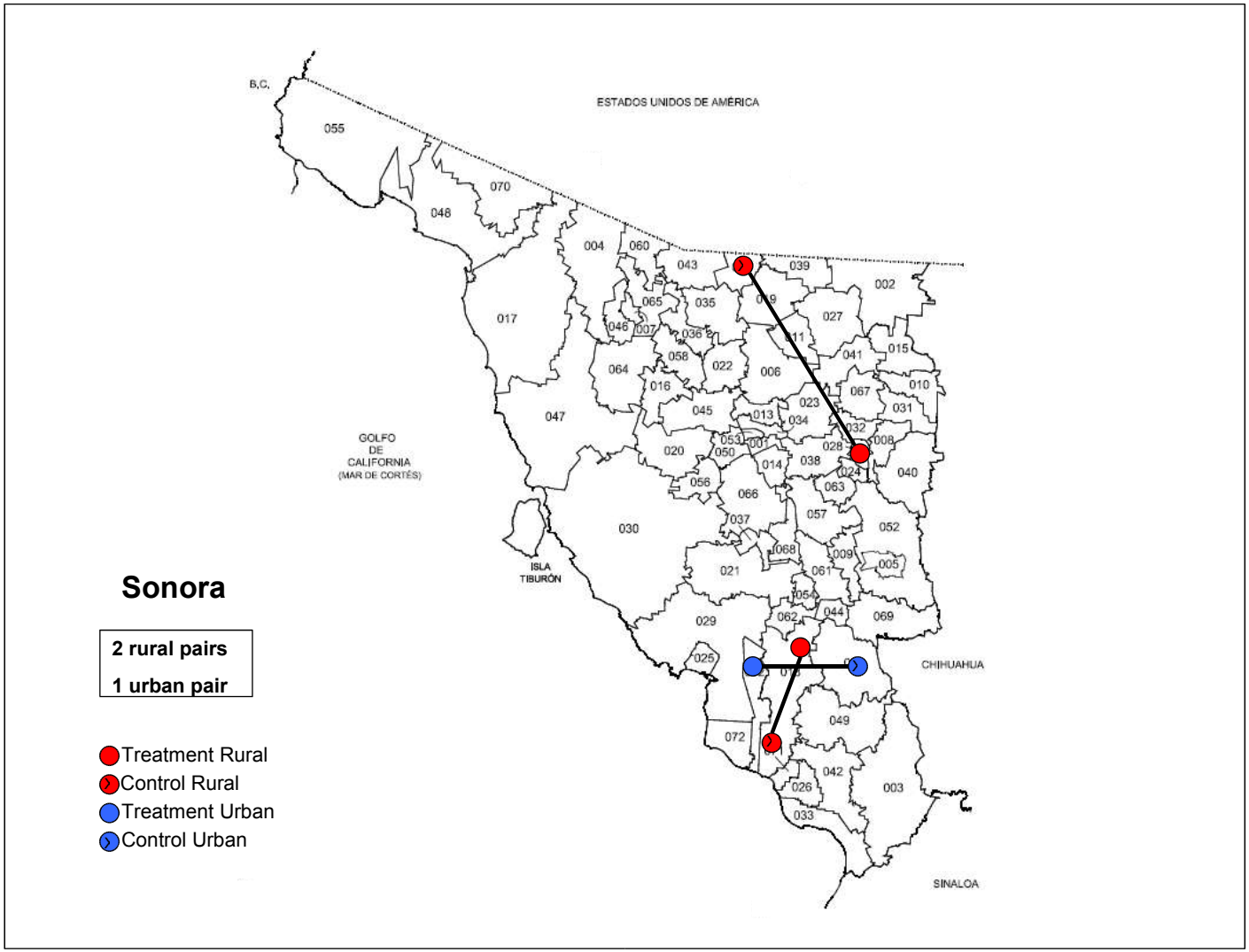
Matched Pairs, Oaxaca



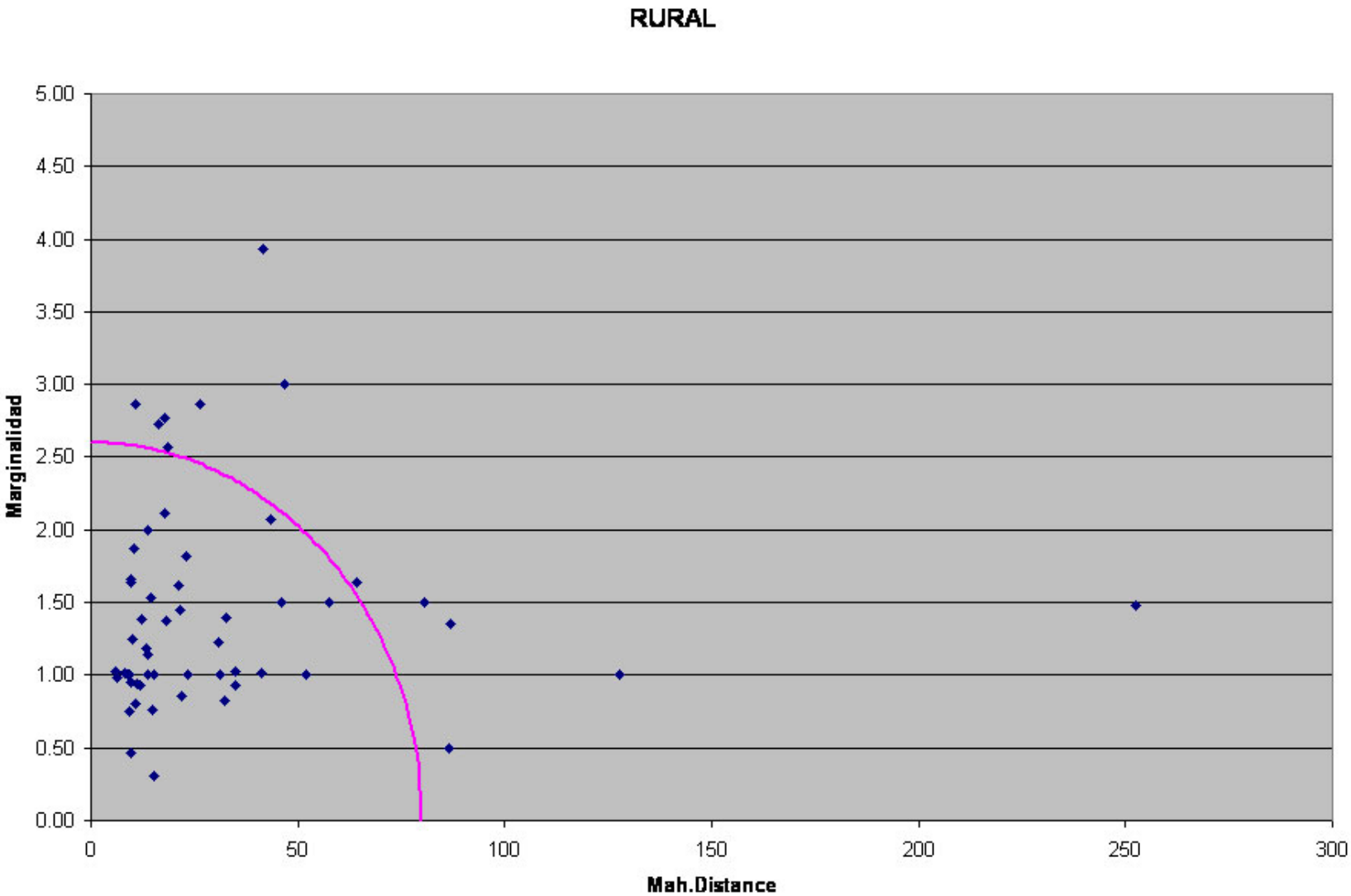
Matched Pairs, San Luis Potosí



Matched Pairs, Sonora



Choosing Pairs for the Survey



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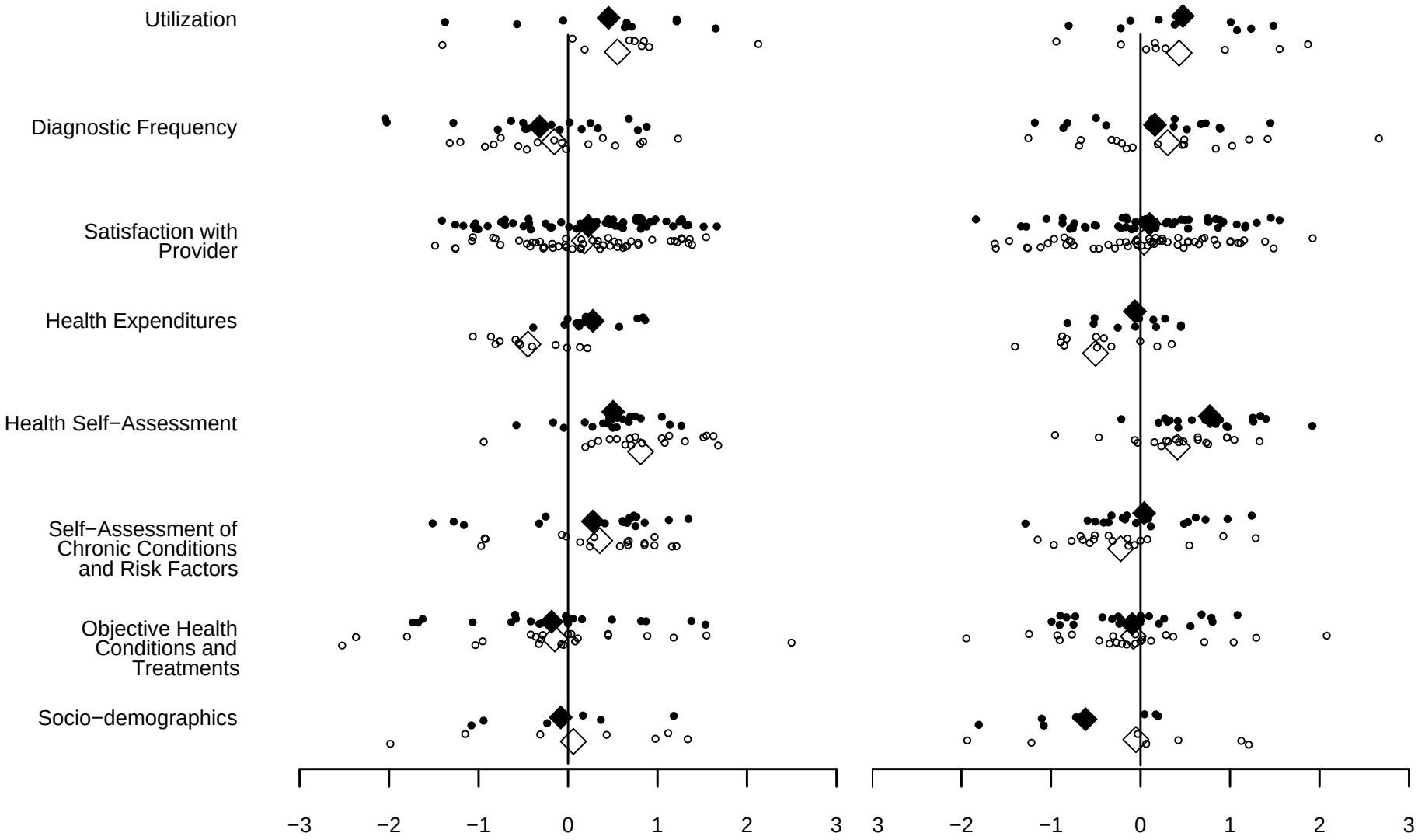
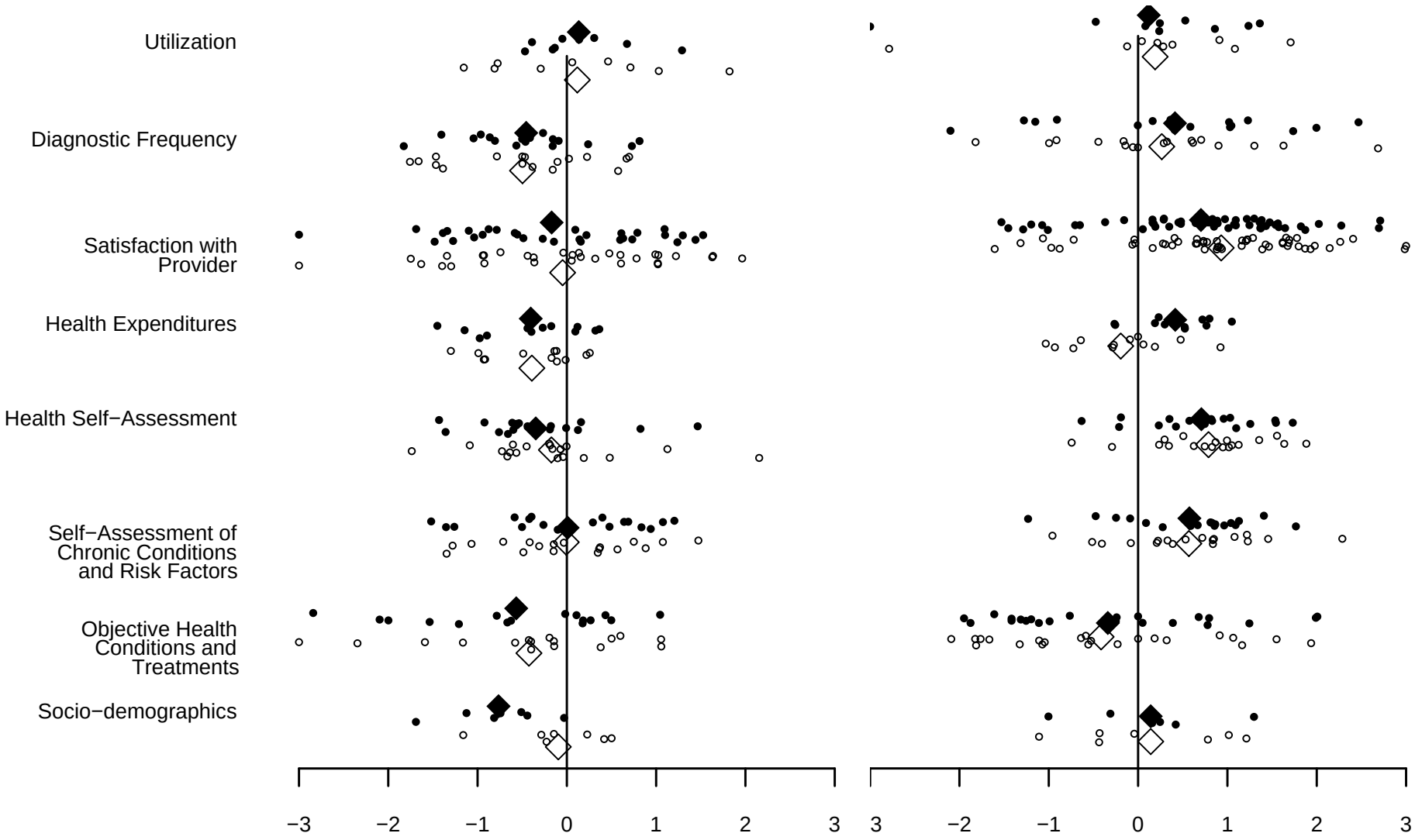
1. If one of the three works, then "effect of SP" on time 0 outcomes (measured in baseline survey) must be zero
2. If we lose pairs, we check for selection bias by rerunning this check

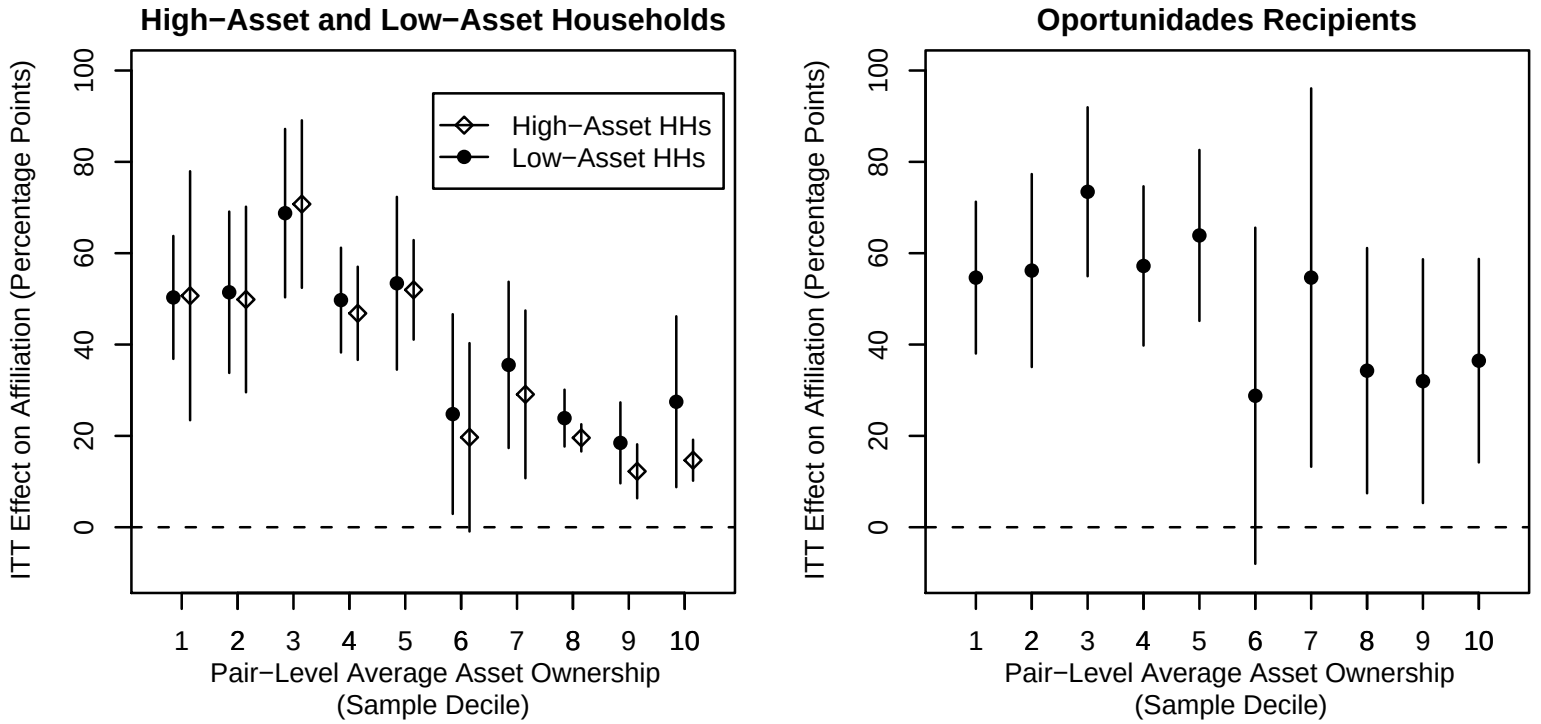
ITT on Outcome Measures at Baseline, for all families (left) and poor families, in Oportunidades (right)



ITT on Outcome Measures at Baseline, for wealthy families (left) and middle income families (right)



Effect of Encouragement on Seguro Popular Affiliation



Horizontal axes: per-capita asset ownership deciles of areas (poorer to the left). Vertical axes: percentage point causal effect of encouragement to affiliate on Seguro Popular affiliation.

Poor areas, not poor households, are affiliated the most

Effect on % of Households with Catastrophic Health Expenditures

	All Study Participants			Experimental Compliers		
	Average (Control)	ITT	SE	Average (Control)	CACE	SE
All	8.4	1.9*	(.9)	9.5	5.2*	(2.3)
Low Asset	9.9	3.0*	(1.3)	11.0	6.5*	(2.5)
High Asset	7.1	0.9	(0.8)	7.9	3.0	(2.7)
Female-Headed	8.5	1.4	(1.1)	10.6	3.8	(3.0)

"Catastrophic expenditures": out-of-pocket health expenses $>$ 30% of post-subsistence income

Effect on Out-of-pocket Health Expenditures, I (in pesos)

	All Study Participants			Experimental Compliers		
	Average (Control)	ITT	SE	Average (Control)	CACE	SE
Overall:						
All	$1631.3	$258.0	($175)	$1712.7	$689.7	($453)
Low Asset	1360.2	425.6*	(197)	1502.6	915.3*	(392)
High Asset	1867.9	128.4	(201)	1933.2	428.2	(669)
Female-Headed	1509.1	156.5	(207)	1689.9	428.6	(566)
Inpatient Care:						
All	532.5	96.9*	(44)	557.1	259.1*	(112)
Low Asset	527.1	188.2*	(73)	579.0	404.8*	(142)
High Asset	537.2	31.1	(52)	536.2	103.6	(173)
Female-Headed	452.5	115.1*	(68)	510.0	315.2*	(182)
Outpatient Care:						
All	448.3	116.7*	(63)	499.1	312.0*	(161)
Low Asset	412.3	176.7*	(73)	466.3	380.0*	(147)
High Asset	479.7	81.9	(69)	533.0	272.9	(230)
Female-Headed	416.3	110.4	(75)	496.8	302.4	(202)

Effect on Out-of-pocket Health Expenditures, II (in pesos)

	All Study Participants			Experimental Compliers		
	Average (Control)	ITT	SE	Average (Control)	CACE	SE
Medicine:						
All	521.1	20.0	(41)	534.5	53.3	(109)
Low Asset	427.3	17.8	(46)	444.7	38.3	(100)
High Asset	603.0	29.4	(47)	627.5	98.1	(157)
Female-Headed	625.6	53.6	(55)	738.9	146.8	(151)
Medical Devices:						
All	139.7	−8.8	(23)	117.8	−23.4	(62)
Low Asset	72.0	−0.2	(20)	72.8	−0.5	(43)
High Asset	198.8	−16.5	(29)	165.6	−55.1	(98)
Female-Headed	155.5	10.9	(34)	162.8	30.0	(94)

Utilization: Overall

	All Study Participants			Experimental Compliers		
	Average (Control)	ITT	SE	Average (Control)	CACE	SE
Utilization (Procedures):						
Used Outpatient Services (%)	62.6	−1.5	(1.9)	64.8	−4.0	(5.2)
Outpatient Visits (count)	1.6	−0.03	(0.09)	1.7	−0.08	(0.23)
Hospitalized (%)	7.6	−0.2	(0.5)	7.9	−0.5	(1.5)
Hospitalizations (count)	0.1	−0.003	(0.006)	0.1	−0.01	(0.02)
Satisfaction with Provider (%)	68.0	−1.0	(1.6)	69.8	−2.6	(4.5)
Utilization (Preventative) (%):						
Eye Exam Last Yr.	10.0	−0.7	(0.7)	9.8	−1.8	(1.9)
Flu Vaccine	25.7	−1.8	(1.4)	27.2	−4.9	(3.7)
Mammogram Last Yr.	5.1	−0.9	(0.6)	5.2	−2.3	(1.6)
Cervical Last Yr.	21.8	−1.3	(2.0)	22.2	−3.2	(4.8)
Pap Test Last Yr.	31.9	−2.3	(2.1)	33.2	−5.8	(5.0)

Self-Assessment: Overall

	All Study Participants			Experimental Compliers		
	Average (Control)	ITT	SE	Average (Control)	CACE	SE
Overall Health	55.7	4.2*	(2.0)	54.3	8.9*	(3.9)
Mobility	86.7	1.0	(1.0)	86.3	2.1	(2.0)
Vigorous Activity	69.2	4.6*	(2.7)	67.9	9.8*	(5.7)
Self-Care	95.3	0.4	(0.6)	95.2	0.8	(1.2)
Soreness	80.3	2.6*	(1.5)	79.3	5.5*	(3.1)
Pain	82.4	2.4*	(1.4)	81.4	5.2*	(2.8)
Sleeping	85.1	2.7*	(1.3)	84.3	5.9*	(2.5)
Depression	77.3	6.4*	(3.7)	76.0	13.8*	(7.3)
Anxiety	85.9	3.1	(2.0)	85.2	6.7	(4.1)

Self-Assessment, Controlling for Baseline Levels

	ITT		CACE	
Overall Health	0.6	(2.2)	1.7	(6.0)
Mobility	0.2	(0.9)	0.6	(2.5)
Vigorous Activity	3.3	(2.4)	8.9	(6.4)
Self-Care	−0.2	(0.6)	−0.5	(1.6)
Soreness	1.0	(1.4)	2.6	(3.8)
Pain	1.1	(1.2)	3.0	(3.3)
Sleeping	1.0	(1.0)	2.6	(2.5)
Depression	0.6	(3.0)	1.5	(7.9)
Anxiety	0.8	(1.8)	2.1	(4.8)

A difference-in-difference test: The causal effect of Seguro Popular on the change from baseline to followup in the difference between treated and control groups on health self-assessment variables.

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  - Seguro Popular evaluation design: being copied around the world

For more information

http://GKing.Harvard.edu