

SURNAMES IN PARAGUAY

A study of the population of Paraguay through isonymy

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Running title: Surnames in Paraguay

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Fig S1a. Frequency of occurrences of paternal surnames. Paraguay 2008, 4.8 m surnames, bilogarithmic scale.

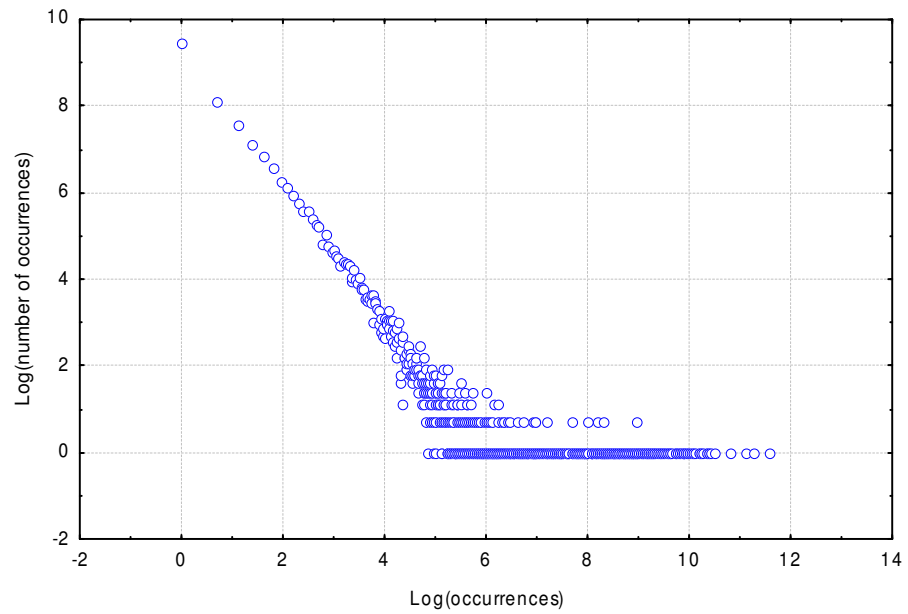


Fig. S1b. Frequency of occurrences of maternal surnames. Paraguay 2008, bilogarithmic scale. 4.8 m surnames.

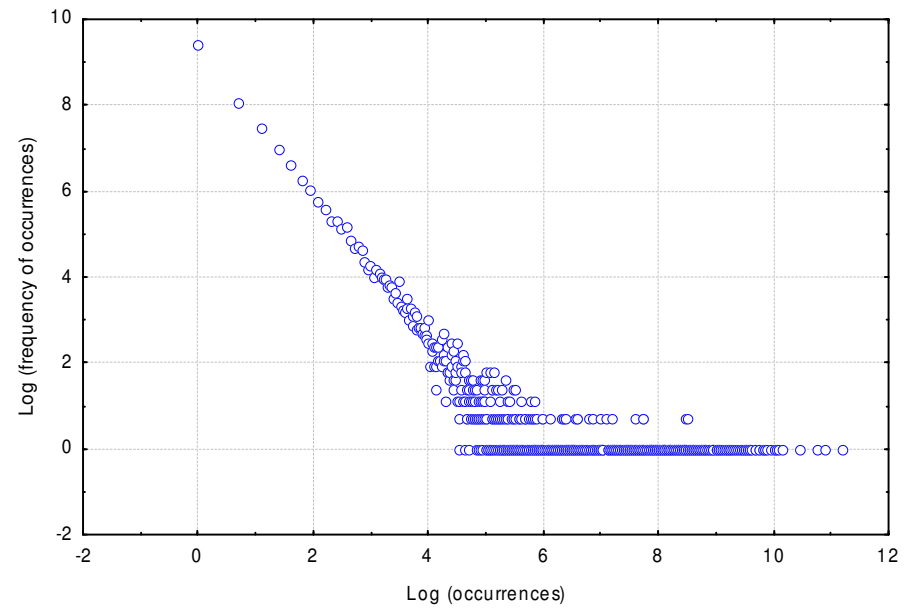


Fig. S2. Variation of F_{ST} and F_{IS} over F_{IT} in 237 Districts of Paraguay. From isonymy of 4.8 million surnames in anagraphic records.

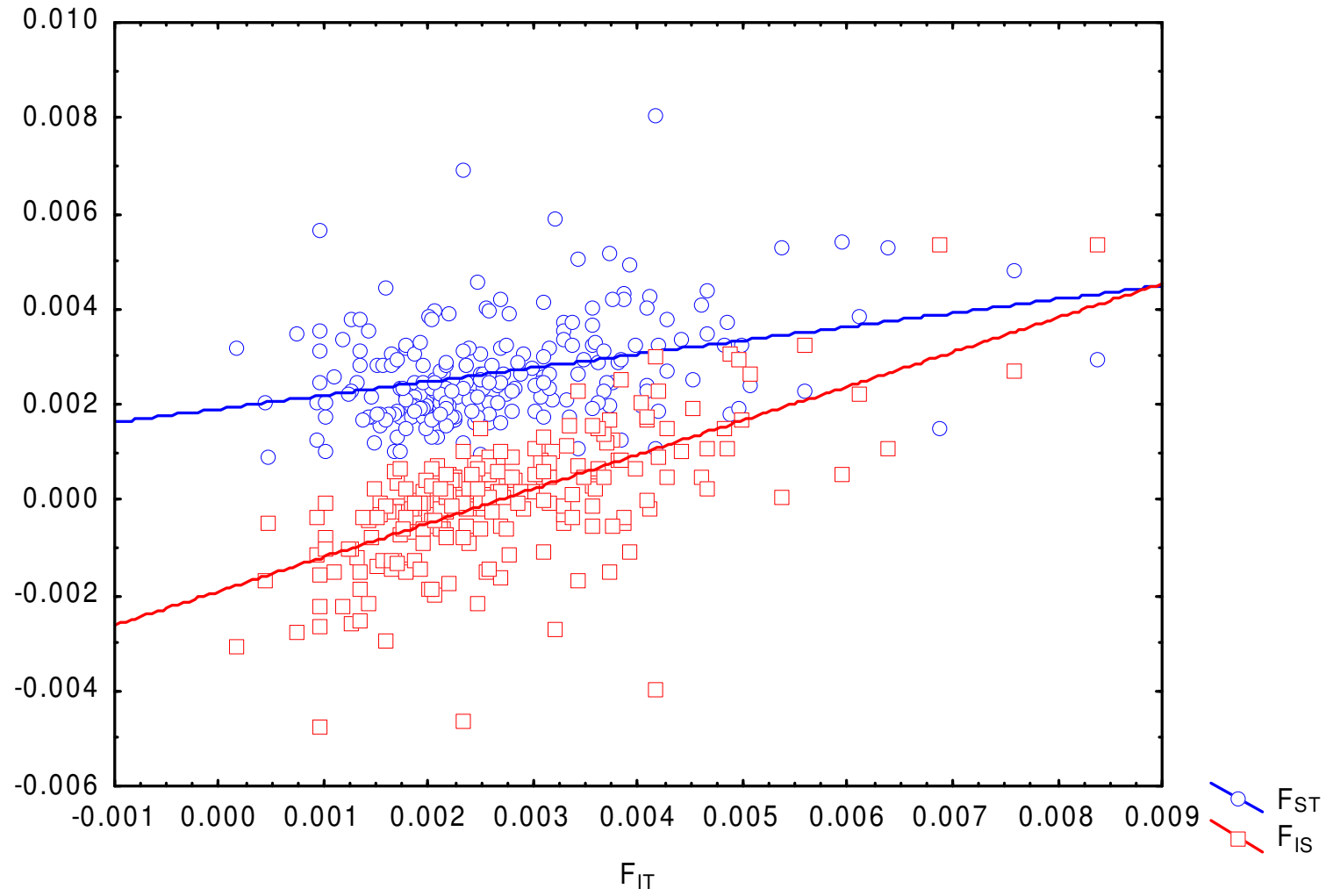


Fig. S3. Variation of Lasker's distance between 237 districts in Paraguay. 4.8 ml surnames, 2008

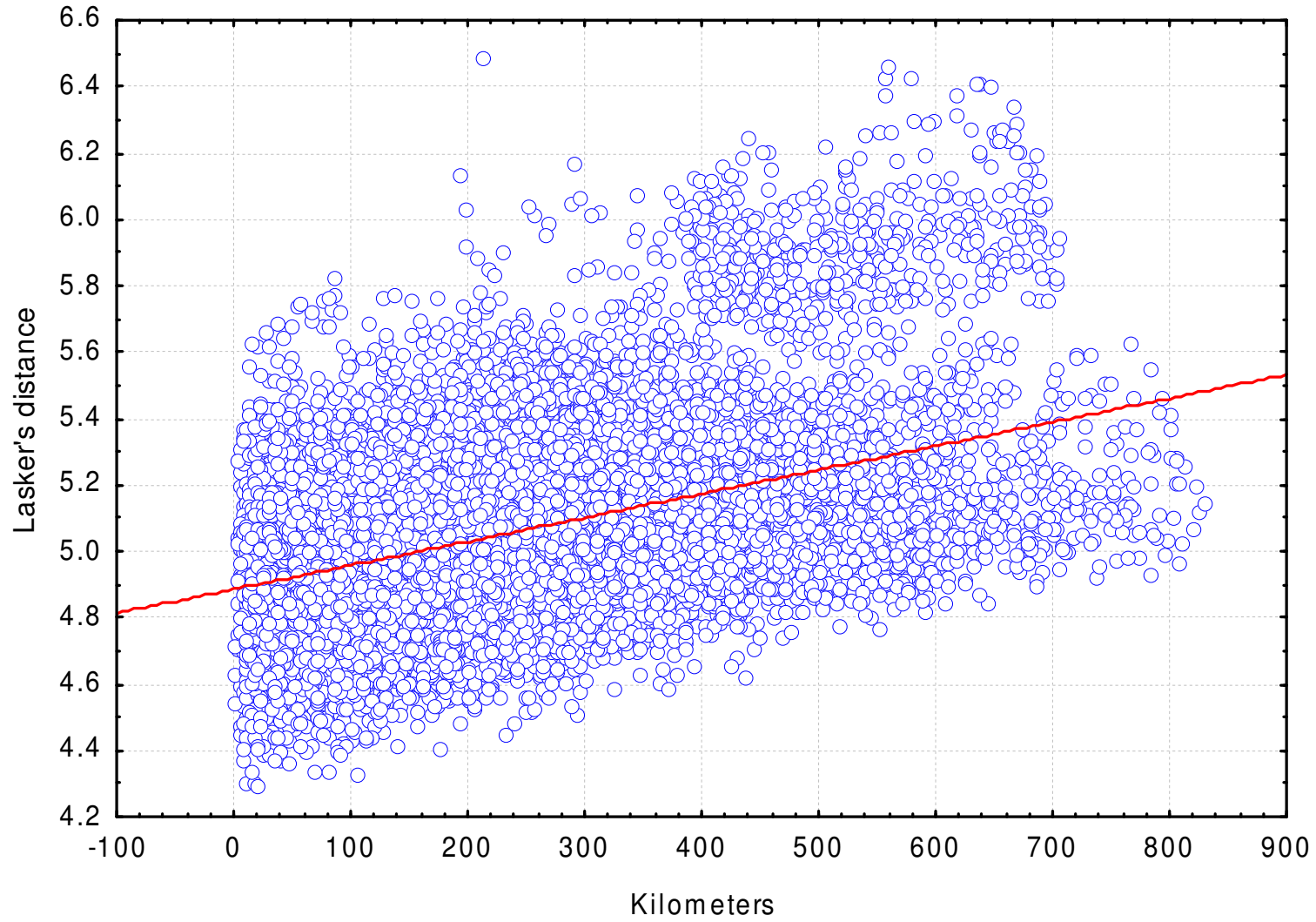


Fig. S4. Plot of the position of the 18 departments of Paraguay on the first and second factor obtained by Principal Component Analysis of Lasker's surname distance matrix.

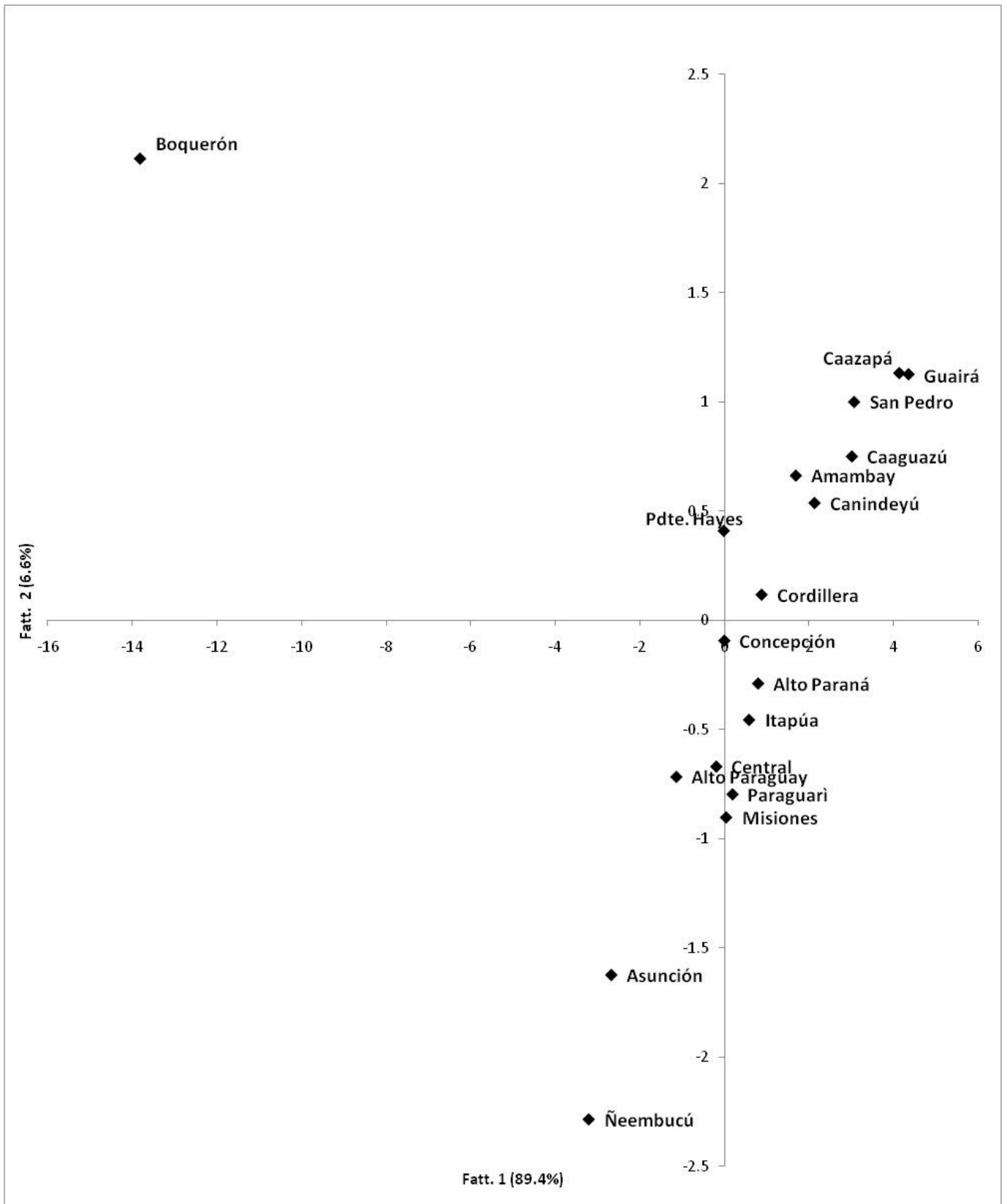


Fig. S5. Dendrogram of 18 Paraguayan departments. Complete Linkage. Lasker's distance.

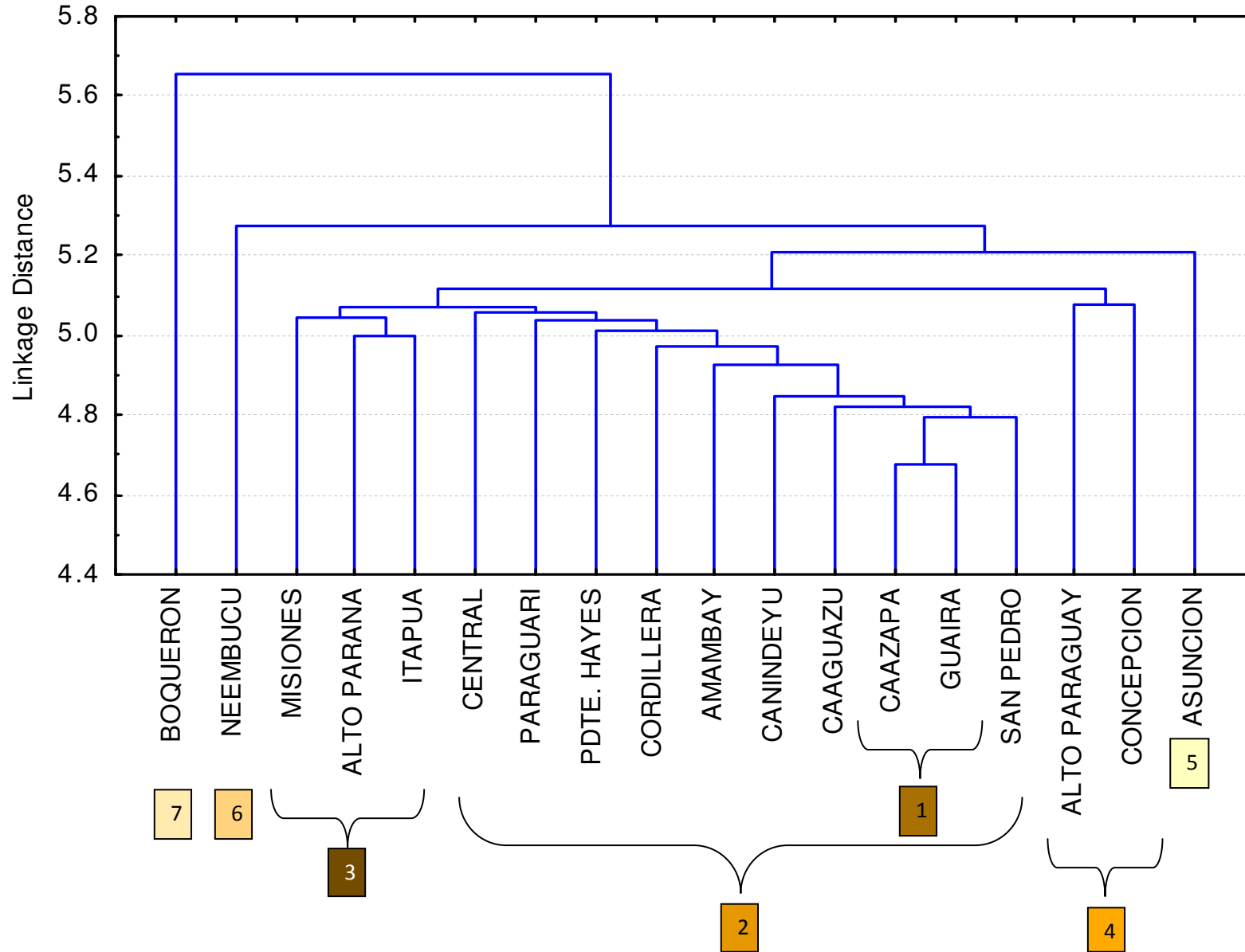


Fig S6. Plot of the position of the 237 districts of Paraguay on the first and second factor obtained by Principal Component Analysis of Lasker's surname distance matrix.

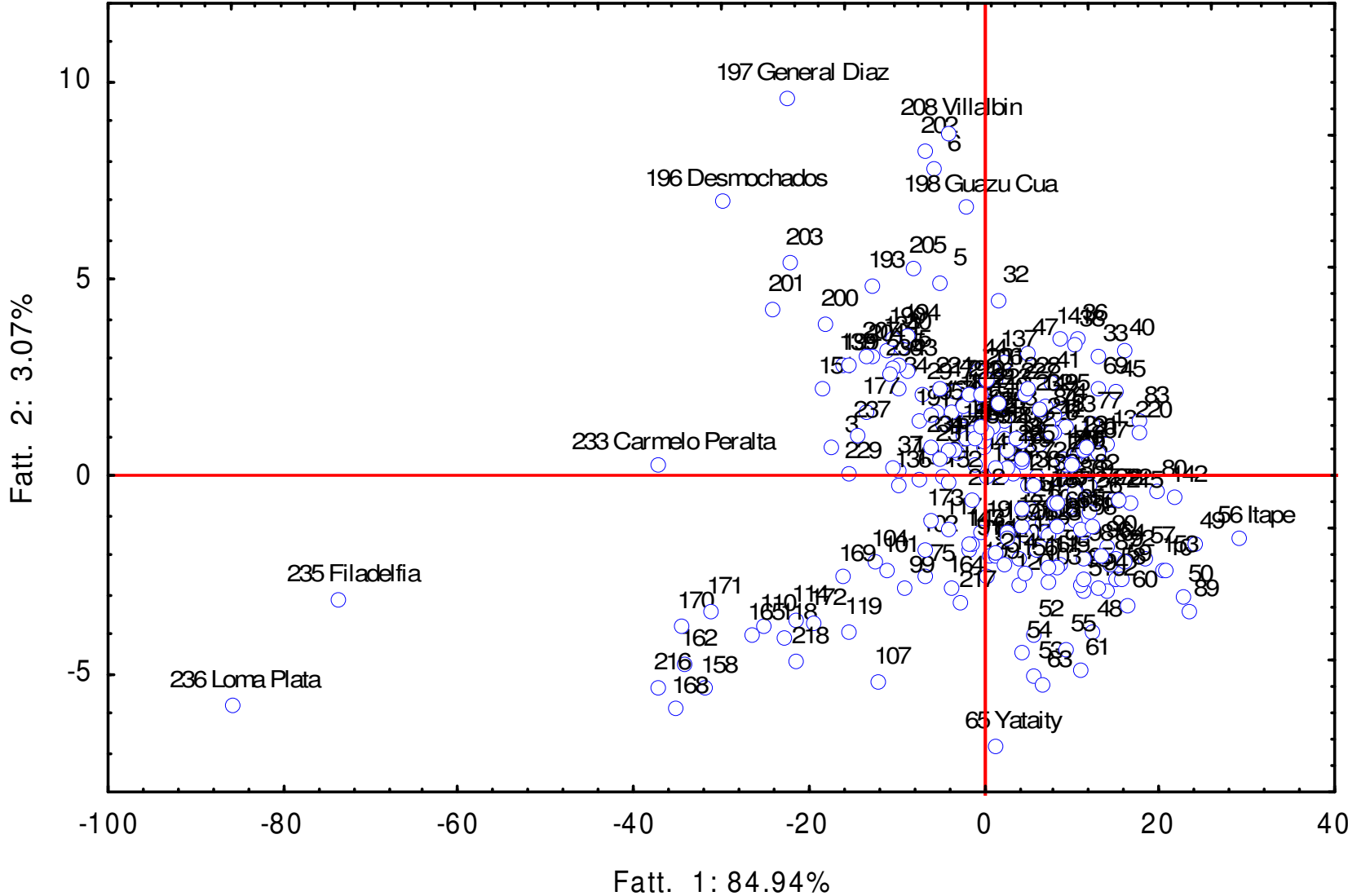


Fig. S7. Dendrogram of the 237 Paraguayan districts. Complete linkage. Lasker's distance

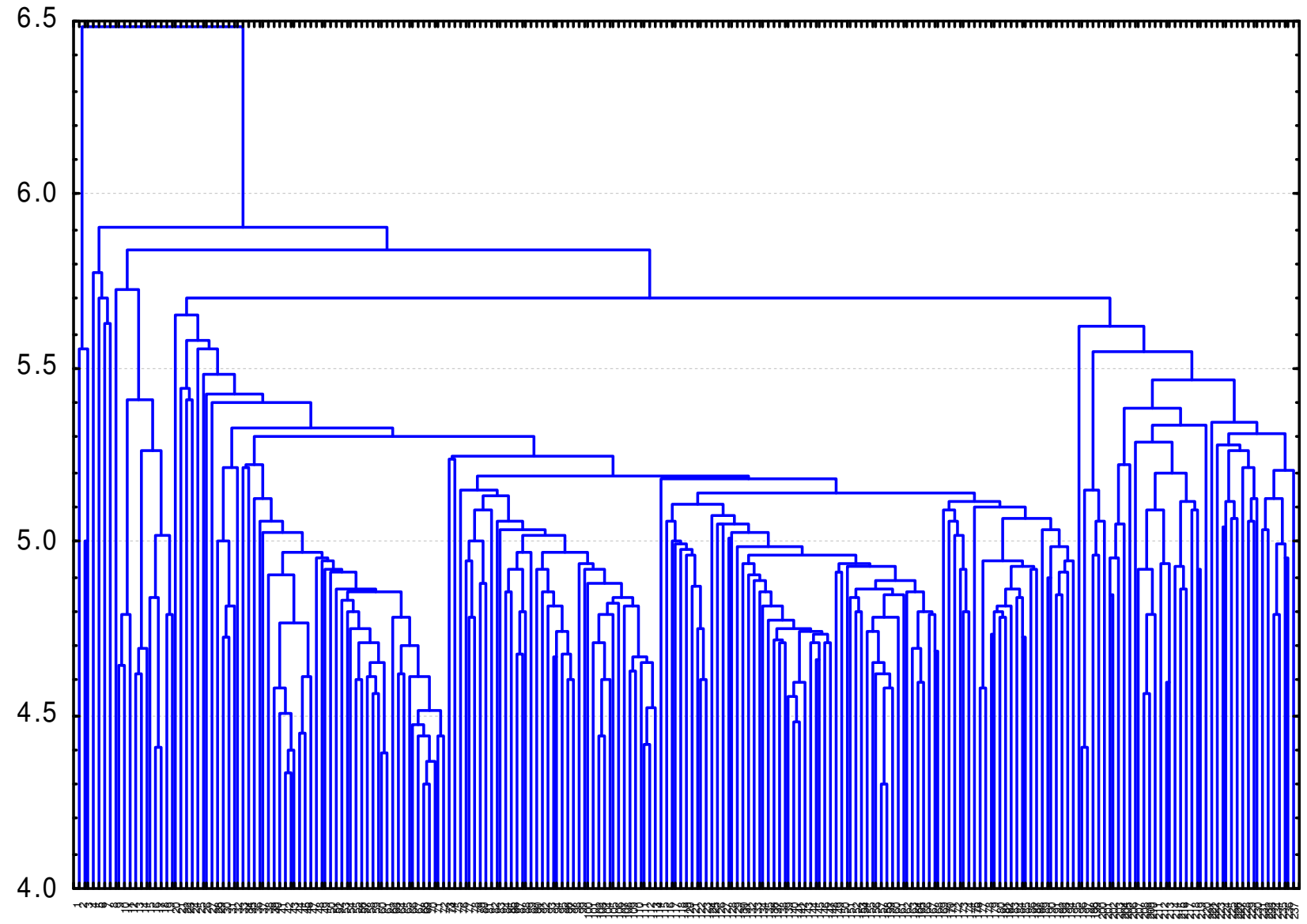
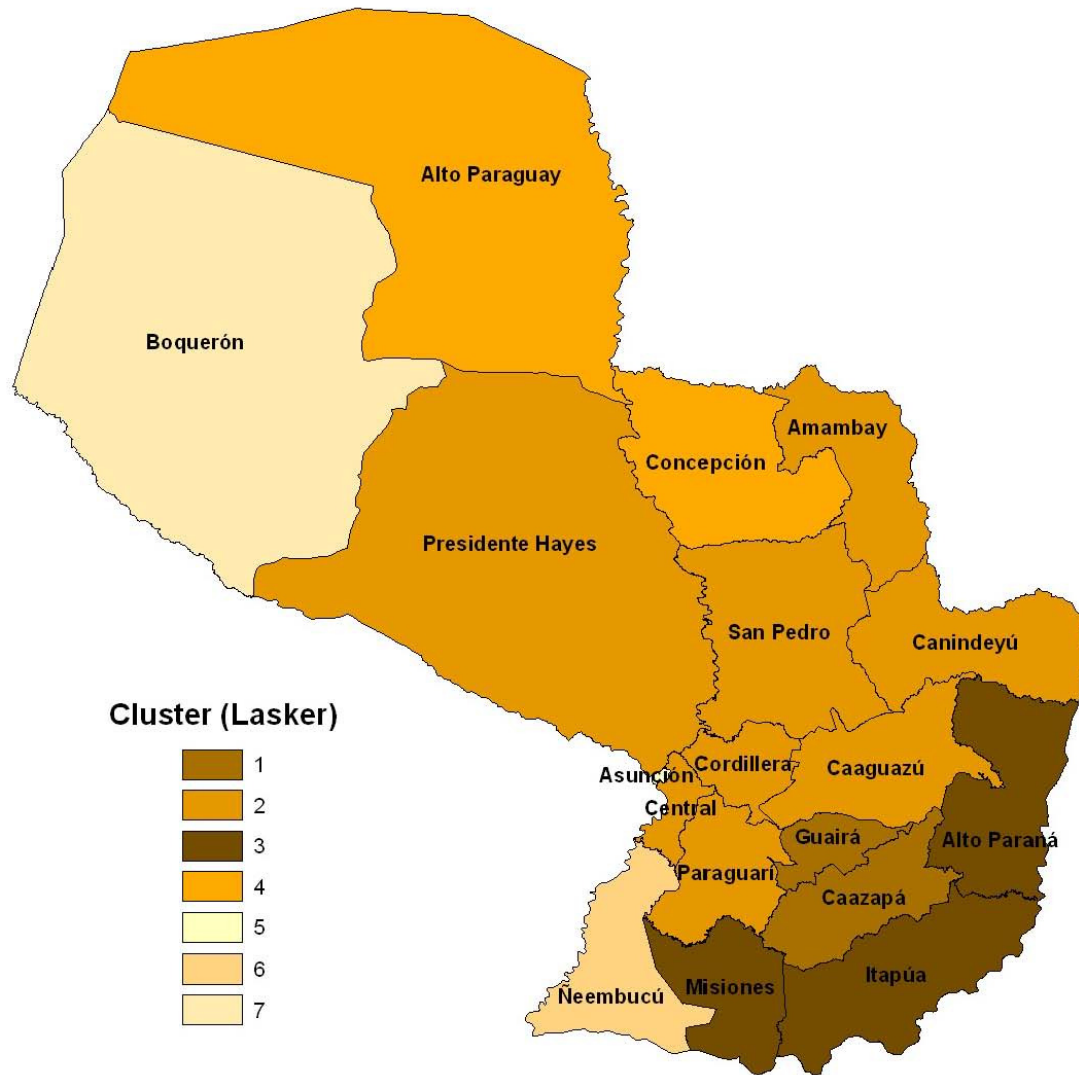


Fig. S8. Map of the main cluster identified with the surname Lasker's distance in Paraguay.



CAGUAZU	7290	34.965	56.301	PARA0031	82	7290	479	5329	442	0.01095	0.00040	0.00987	0.00079	91.5	3.4	102.2	5.1	0.00255	0.00007	0.01236	0.00455	0.01823	0.00747	12618	585	5339	0.00995	0.00006	0.00249	0.00786	0.00038	0.01020	0.00027	97.8	2.7
CAGUAZU	3852	25.222	56.054	PARA0033	83	3842	226	2838	334	0.01440	0.00074	0.01209	0.00071	69.7	3.7	84.1	5.2	0.00323	0.00017	0.01778	0.00924	0.02872	0.00716	6640	443	2838	0.00951	0.00008	0.00238	0.01415	0.00457	0.01293	0.00051	177.2	3.1
CAGUAZU	2946	25.222	56.054	PARA0034	84	2946	347	2221	369	0.00922	0.00046	0.00906	0.00055	111.5	5.8	115.0	7.5	0.00218	0.00009	0.01642	0.00841	0.04842	0.00340	5167	468	2221	0.00900	0.00007	0.00225	0.02019	0.00877	0.00811	0.00034	116.3	4.7
CAGUAZU	2646	25.000	55.793	PARA0035	85	2646	529	4646	473	0.00921	0.00034	0.00940	0.00041	109.3	4.2	107.5	4.9	0.00228	0.00007	0.01630	0.00619	0.02611	0.00104	11192	667	4646	0.00464	0.00138	0.00386	0.00970	0.00282	0.00892	0.00026	109.7	3.2
CAGUAZU	9639	25.062	55.927	PARA0037	86	9639	589	6759	552	0.00807	0.00017	0.00972	0.00036	111.8	3.4	103.5	3.9	0.00229	0.00005	0.01463	0.00349	0.01582	0.00058	16398	748	6759	0.01110	0.00049	0.00277	0.00661	0.00036	0.00934	0.00021	109.1	2.6
CAZAPÁ	13209	26.120	56.383	PARA0015	87	13209	526	4946	485	0.01174	0.00042	0.01207	0.00037	94.7	2.3	82.9	2.6	0.00293	0.00006	0.00837	0.00212	0.00863	0.00026	22654	662	4946	0.01400	0.00079	0.00241	0.00078	0.01173	0.00021	94.6	1.7	
CAZAPÁ	9641	26.032	55.935	SAR0001	88	9641	583	7053	513	0.01089	0.00021	0.01079	0.00035	91.7	2.6	92.9	3.1	0.00267	0.00005	0.009425	0.00269	0.01305	0.00048	16694	751	7053	0.01361	0.00073	0.00340	0.005540	0.000210	0.01070	0.00023	93.0	2.0
CAZAPÁ	4076	25.916	55.569	PARA0003	89	4076	250	3021	246	0.02195	0.00004	0.02034	0.00101	45.1	2.0	48.9	2.5	0.00520	0.00017	0.010937	0.00478	0.01594	0.00088	7097	315	3021	0.01490	0.00372	0.006631	0.00221	0.02081	0.00068	47.0	1.6	
CAZAPÁ	3205	26.366	56.435	PARA0005	90	3205	252	2205	235	0.02015	0.00007	0.02145	0.00126	49.4	2.5	46.6	2.9	0.00505	0.00019	0.015181	0.00746	0.02069	0.001243	5430	320	2205	0.01361	0.00365	0.00340	0.00679	0.00045	0.02048	0.00076	49.4	1.9
CAZAPÁ	4259	26.366	56.435	PARA0006	91	4259	294	3224	264	0.00999	0.00014	0.00994	0.00014	112.6	4.9	117.7	6.1	0.00281	0.00011	0.01162	0.00188	0.01763	0.00061	11222	380	3224	0.01225	0.00048	0.00386	0.00612	0.01125	0.00059	114.2	4.1	
CAZAPÁ	3654	25.950	55.919	PARA0009	92	3654	282	2597	264	0.01368	0.00062	0.01355	0.00027	73.6	3.5	74.9	4.1	0.00329	0.00011	0.019737	0.00908	0.02839	0.00154	6251	338	2597	0.01579	0.00066	0.00395	0.012010	0.00425	0.01315	0.00046	76.0	2.7
CAZAPÁ	2759	26.184	56.477	PARA0011	93	2759	227	1970	216	0.01655	0.00083	0.01508	0.00092	60.8	3.2	67.6	4.3	0.00384	0.00015	0.021549	0.01081	0.02166	0.00046	4729	276	1970	0.02437	0.00226	0.00609	0.01352	0.00543	0.01537	0.00061	65.0	2.6
CAZAPÁ	14866	26.113	55.939	PARA0013	94	14866	569	10687	522	0.01088	0.00026	0.01109	0.00021	91.5	2.2	90.0	2.5	0.00371	0.00005	0.006146	0.00147	0.00847	0.00033	25553	722	10687	0.00842	0.00006	0.00211	0.003565	0.00005	0.01286	0.00020	91.4	1.7
CAZAPÁ	13209	26.120	56.383	PARA0015	87	13209	526	3946	485	0.01174	0.00042	0.01203	0.00037	94.7	2.3	82.9	2.6	0.00293	0.00006	0.015199	0.00516	0.02012	0.00032	9480	662	3946	0.00666	0.00070	0.00216	0.00518	0.00047	0.01173	0.00021	94.6	1.7
CAZAPÁ	9641	26.032	55.935	PARA0017	96	12720	562	11960	535	0.12920	0.00029	0.11300	0.00031	76.8	1.8	83.6	2.3	0.00309	0.00005	0.006440	0.00101	0.00964	0.00026	29190	745	11960	0.00736	0.00218	0.00184	0.002737	0.00048	0.01286	0.00021	90.1	1.4
IPATÁ	51578	27.330	55.871	PARA0700	97	51578	2933	35413	2538	0.00685	0.00010	0.00708	0.00012	145.4	2.1	140.8	2.5	0.00173	0.00002	0.020851	0.00001	0.003960	0.00070	86991	4086	35413	0.00895	0.00001	0.00224	0.01652	0.00019	0.00691	0.00008	143.9	1.6
IPATÁ	4747	26.582	56.638	PARA0701	98	4747	336	3330	462	0.01123	0.00061	0.01043	0.00066	89.7	4.2	97.7	5.4	0.00266	0.00006	0.003880	0.00051	0.02612	0.00132	8077	699	3330	0.01261	0.00050	0.00315	0.014327	0.00040	0.01663	0.00037	94.2	3.4
IPATÁ	4780	27.050	55.552	PARA0703	99	4780	680	3216	665	0.00726	0.00033	0.00735	0.00043	140.8	4.9	140.9	8.6	0.00174	0.00006	0.0028619	0.00121	0.041261	0.00243	7996	942	3216	0.01337	0.00160	0.00334	0.017795	0.00061	0.00608	0.00026	144.9	5.5
IPATÁ	10771	27.347	55.785	PARA0705	100	10771	996	7260	862	0.00752	0.00023	0.00740	0.00027	133.7	4.1	135.0	5.0	0.00185	0.00004	0.012259	0.00372	0.018237	0.00068	18031	1299	7260	0.00661	0.00002	0.00065	0.007442	0.00017	0.02400	0.00017	135.2	3.2
IPATÁ	4905	27.016	55.568	PARA0707	101	4905	606	3452	633	0.00693	0.00029	0.00621	0.00030	147.6	6.4	167.9	8.7	0.00159	0.00005	0.029205	0.00123	0.046390	0.00228	8357	905	3452	0.00608	0.00007	0.00152	0.018738	0.00011	0.00635	0.00021	159.6	5.3
IPATÁ	4831	27.199	55.802	PARA0709	102	4831	800	3326	757	0.00674	0.00031	0.00713	0.00039	152.0	7.2	145.3	8.3	0.00164	0.00006	0.030507	0.00387	0.041864	0.00230	8157	1149	3326	0.00405	0.00018	0.00182	0.018562	0.00065	0.00656	0.00023	154.3	5.6
IPATÁ	7071	26.598	54.769	PARA0711	103	7071	801	5162	655	0.00861	0.00032	0.00931	0.00041	117.1	4.5	108.6	4.9	0.00218	0.00006	0.015290	0.00161	0.020612	0.00018	12233	1021	5162	0.01220	0.00088	0.00305	0.009310	0.00288	0.00871	0.00025	115.0	3.3
IPATÁ	4078	27.232	56.219	PARA0713	104	4078	661	2928	605	0.00794	0.00036	0.00725	0.00039	138.9	6.0	144.0	8.1	0.00181	0.00006	0.003646	0.001304	0.048501	0.00260	6897	928	2928	0.00630	0.00022	0.00160	0.019684	0.00052	0.00725	0.00025	138.8	5.0
IPATÁ	10182	27.158	56.252	PARA0715	105	10182	631	7015	608	0.01054	0.00030	0.01017	0.00035	94.8	2.7	98.7	3.4	0.00266	0.00006	0.009923	0.00265	0.013870	0.00056	17197	852	7015	0.00998	0.00006	0.00049	0.005627	0.000124	0.01003	0.00022	97.3	2.2
IPATÁ	10843	26.749	55.268	PARA0717	106	10843	858	7891	811	0.00834	0.00025	0.00808	0.00028	120.3	3.7	124.7	4.4	0.00203	0.00005	0.010971	0.00313	0.015553	0.00041	20674	1169	7891	0.01483	0.00168	0.00371	0.006529	0.000151	0.01831	0.00019	123.1	2.9
IPATÁ	3925	26.981	55.886	PARA0719	107	3925	740	2763	726	0.00771	0.00039	0.00780	0.00048	133.1	7.0	137.1	9.2	0.00179	0.00007	0.012789	0.00169	0.03427	0.00027	6658	1121	2763	0.01724	0.00002	0.00181	0.020895	0.00038	0.01477	0.00029	141.3	3.6
IPATÁ	7071	26.598	54.769	PARA0711	103	7071	801	5162	655	0.00861	0.00032	0.00931	0.00041	117.1	4.5	108.6	4.9	0.00218	0.00006	0.015290	0.00161	0.020612	0.00018	12233	1021	5162	0.01220	0.00088	0.00305	0.009310	0.00288	0.00871	0.00025	115.0	3.3
IPATÁ	10843	26.749	55.268	PARA0717	106	10843	858	7891	811	0.00834	0.00025	0.00808	0.00028	120.3	3.7	124.7	4.4	0.00203	0.00005	0.010971	0.00313	0.015553	0.00041	20674	1169	7891	0.01483	0.00168	0.00371	0.006529	0.000151	0.01831	0.00019	123.1	2.9
IPATÁ	3925	26.981	55.886	PARA0719	107	3925	740	2763	726	0.00771	0.00039	0.00780	0.00048	133.1	7.0	137.1	9.2	0.00179	0.00007	0.012789	0.00169	0.03427	0.00027	6658	1121	2763	0.01724	0.00002	0.00181	0.020895	0.00038	0.01477	0.00029	141.3	3.6
IPATÁ	7071	26.598	54.769	PARA0711	103	7071	801	5162	655	0.00861	0.00032	0.00931	0.00041	117.1	4.5	108.6	4.9	0.00218	0.00006	0.015290	0.00161	0.020612	0.00018	12233	1021	5162	0.01220	0.00088	0.00305	0.009310	0.00288	0.00871	0.00025	115.0	3.3
IPATÁ	10843	26.749	55.268	PARA0717	106	10843	858	7891	811	0.00834	0.00025	0.00808	0.00028	120.3	3.7	124.7	4.4	0.00203	0.00005	0.010971	0.00313	0.015553	0.00041	20674	1169	7891	0.01483	0.00168	0.00371	0.006529	0.000151	0.01831	0.00019	123.1	2.9
IPATÁ	3925	26.981	55.886	PARA0719	107	3925	740	2763	726	0.00771	0.00039	0.00780	0.00048	133.1	7.0	137.1	9.2	0.00179	0.00007	0.012789	0.00169	0.03427	0.00027	6658	1121	2763	0.01724	0.00002	0.00181	0.020895	0.00038	0.01477	0.00029	141.3	3.6
IPATÁ	7071	26.598	54.769	PARA0711	103	7071	801	5162	655	0.00861	0.00032	0.00931	0.00041	1																					

Supplementary Table 2. Frequency of the first 50 surnames in Paraguay.

The frequencies given are obtained from the paternal and maternal surnames pooled.

COLMAN	21107
OJEDA	21229
CORONEL	21395
MENDOZA	22328
BARRIOS	22774
RUIZ-DIAZ	23666
VELAZQUEZ	23865
SANABRIA	24103
VAZQUEZ	24943
PEREDES	25149
ESCOBAR	25184
GARCIA	25459
JARA	26555
AMARILLA	27110
BOGADO	28223
PEREIRA	28233
DIAZ	29943
AQUINO	30432
SANCHEZ	30968
MEDINA	32193
CABALLERO	32688
ESPINOLA	33119
TORRES	33313
BRITEZ	33342
SOSA	33545
CARDOZO	33627
FRANCO	33797
ROMERO	35197
FERREIRA	35755
CABRERA	35902
GALEANO	36955
BAEZ	38923
AYALA	39447
NUÑEZ	41195
RODRIGUEZ	41827
CACERES	44880
ORTIZ	45337
ROJAS	47176
ACOSTA	47700
GOMEZ	48173
FERNANDEZ	51961
VILLALBA	53916
RAMIREZ	54881
DUARTE	55768
VERA	57793
GIMENEZ	61787
LOPEZ	84488
MARTINEZ	113321
BENITEZ	130978
GONZALEZ	179627