
Rio de Janeiro: social, ethnic, and spatial dimensions of inequality

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Paper's Conclusions:

The author discuss some trends in the socio-spatial structure of the city of Rio de Janeiro, Brazil, based on indices of residential segregation, head of household's schooling, slum growth rates, and population spatial distribution, taking 1991 and 2000 as the base years, suggesting that:

1. The social structure of Brazilian metropolises is marked, although not exclusively, by color difference;
2. The range of questions related to metropolitan poverty in Rio de Janeiro is much broader and complex than often supposed;
3. In Brazil, racism can display regional characteristics: for example, prejudice against Northeasterners, as condemnable as that against non-whites;
4. It would thus be more productive to debate the characteristics and nature of lifetime inequalities in results and opportunities;
5. In the case of Rio de Janeiro, existing inequalities are predominantly of a social rather than ethnic nature. The spatial expression of this model is imprinted in the city's geography through a complex system of clusters and peripheries forming a considerably diverse mosaic and serving as the principal mechanism for interaction between the various social strata;
6. In the United States, the one drop blood principle led to the issue's racialization in a context where inequality was understood on the basis of civil rights. However in Brazil the cultural, sociological, and political context is quite different.

Introduction

The extent of economic and social inequalities in Brazil is widely known. According to the indices usually employed to measure inequalities, Brazil is one of the most unequal societies in the world. For example, analyzing the Gini index, the most widely used indicator to evaluate income inequality in the various regions of the world, over the course of the last four decades of the 20th century (Table 1), Latin America was the most unequal region in the world (Morley 2000). When we include the data for Brazil in this comparison, it becomes evident that the country's inequality levels are even higher than for Latin America as a whole throughout the forty-year period. In other

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words, Brazil suffers heavy income inequality, even for a continent where such inequality is already high according to any international comparison. And Brazil has not only occupied this inglorious position since the 1960s, but its income inequality levels also appear to be incredibly persistent (Barros, Henriques et al. 2000; Haselbalg 2003).

Table 1 – Median Gini Coefficients by Region and Decade

Region	1960	1970	1980	1990
Eastern Europe	0.25	0.25	0.25	0.29
South Asia	0.36	0.34	0.35	0.32
OECD and High-Income Countries	0.35	0.35	0.33	0.34
East Asia and the Pacific	0.37	0.40	0.39	0.38
Middle East and North Africa	0.41	0.42	0.41	0.38
Sub-Saharan Africa	0.50	0.48	0.44	0.47
Latin America	0.53	0.49	0.50	0.49
Brazil	0.54	0.60	0.60	0.60

Source: (Barros, Henriques et al. 2000; Morley 2000)

Recent studies show an extraordinary stability in the high levels of economic inequality and poverty in Brazil in the last 20 years. For example, research has shown that for all families, the wealthiest 10% had incomes some 25 times higher than the poorest 40%. The percentage of families below the poverty line remained around 35 to 40% of the total population over these two decades. What appears to be even more significant is the fact that inequality itself is one of the causes of poverty (Henriques 2000; Haselbalg e Silva 2003).

The Brazilian social structure clearly has a broad base and a narrow top. In addition, it displays an even more particular characteristic, since from the base to the top the colors of the various social strata get whiter. African descendants, or blacks (*pretos*) and browns (*pardos*) according to the terminology used by IBGE, the Brazilian Institute of Geography and Statistics or National Census Bureau, represent 45% of the country's total population, but 69% of its indigents. The data systematically suggest that Brazilians with black ancestry are at a disadvantage (Soares, Bill et al. 2005), whatever the indicators and/or areas analyzed: health (Wood e Lovell 1992; Olinto e Olinto 2000); education (Hasenbalg e Silva 1992; Hasenbalg e Silva 1999); income (Silva 1985; Soares e Silva 1987; Silva 1988); social mobility (Garcia-Zamor 1970; Pastore 1979; Pastore e Silva 2000; Haselbalg e Silva 2003); family situation (Henriques 2001);

urban infrastructure and services (Telles 1992; Telles 1995a, 2003; Brandão 2004); gender (Lovell 1994; Telles 1995b); and police violence (Mitchell e Wood 1999; Escóssia 2001a; Escóssia 2001b; Fischer 2004; Soares, Bill et al. 2005), to cite just a few among numerous articles, reports, and news stories. While some social indicators in Brazil have improved in recent years, it was the country's whites who substantially enjoyed these benefits (Telles 2003). Some 117 years after slavery was abolished, it is no exaggeration to state that only now is the country beginning to deal with a problem that began in 1888, namely how to include African descendants in the national society (Herlinger 2001; Htun 2004).

In the decades following Abolition, African descendants had only limited access to farm jobs in coffee-growing and occupations in the country's nascent industry, particularly in the Southeast, where most of the foreign immigration was focused. The entry of a large number of non-whites into jobs in the modern urban economy only began after 1930. Today, blacks and browns are overrepresented in urban manual occupations. Meanwhile, they participate disproportionately in the worst jobs in the informal sector, as suggested by the lower proportion of non-whites among employees with signed working documents among the total number of individuals occupied in non-agricultural activities (Silva 1988). Currently, the discriminatory barriers to access appear to have shifted to a higher level in the occupational structure. This is suggested by the unequal participation of whites and non-whites in non-manual occupations, a proxy for middle-class positions.

Without a doubt, color imposes a differentiation among Brazilians and overlaps social stratification, whether by class or occupation. In the highest socioeconomic strata there are virtually no non-whites, who nevertheless predominate among workers with the lowest skills. The more highly-skilled workers are mostly white (Telles 1994; Telles 2003). The majority of the poorest are non-whites, especially black women, the victims of dual discrimination, by color and gender (Accoud e Beghin 2002). Within each social or occupational group, whites on average are in a better situation than non-whites: on average, white rural manual laborers earn twice as much as their black counterparts. Both are rural manual laborers, but one is white and the other black. This single difference is associated with a 100% wage gap (Pastore 1979; Pastore e Silva 2000).

Socio-Spatial Dimensions of Poverty

Urban poverty in Brazil is not distributed homogeneously or evenly in intra-urban space, nor is it concentrated in some well-defined, contiguous space; in other words, social segregation in space is not “perfect”. Thus, not all areas identified as “low-income” are occupied only by the poor, and neither do all the poor live in what are considered needy areas. This immediate observation for anyone studying the metropolis reflects some of the classical difficulties in defining, characterizing, and locating urban poverty, as well as posing non-trivial questions for compensatory public policy-making, in addition to academic interest.

Although there is already a considerable body of literature fueling this debate, no extensive literature search is needed to appreciate either the formidable conceptual, analytical, and methodological difficulties involved in any attempt to define, characterize, and identify the so-called urban poverty, or the effects, on the social structure, of subsuming various portions of the territory into the dynamics of financial capital (there is a reasonable consensus, among scholars of the issue, on the precarious level of available indicators).

Should urban poverty be measured by family or individual income? In absolute or relative terms? Or perhaps by some purchasing patterns subject to the whims of cultural and/or regional differences? Or even in a more particular way, based on minimum calorie or protein intake requirements for survival, or perhaps by a generic energy adequacy indicator? As an alternative, one might consider pre-established (subjective?) levels for basic unmet needs in health, education, sanitation, etc., whose compounding into a single indicator would also involve some arbitrariness in the weighting and in the measurement itself. Neither can one overlook the problems associated with temporal variation in the purchasing power of the minimum wage, whose use is already consecrated in the literature (as with the problems related to the qualification of population groups when gender and color are taken into account). These considerations characterize poverty first and foremost as a multidimensional syndrome of various unmet needs – in health, education, housing, sanitation, leisure, nutrition, etc. However these ambiguities involve obvious practical difficulties, such as the demarcation, in time

and space, of the target population for some specific policy, because these unmet needs do not cumulatively impact the same population groups, as evidenced in the discussion on methods for measurement of poverty, whether using the poverty line or basic unmet needs (Santos 2004).

The above-mentioned questions, rather than minimizing the manifestations of poverty, indicate the phenomenon's enormous complexity. By defining the target population for public programs and/or policies as all those who face some constraint under the prevailing situation, for at least one type of need – whether it be individual, family, or collective consumption – one would encompass more than half of the Brazilian population. Rather than defining the set on the basis of the combination of all the subsets of the population with some unmet need, if one chose to provide priority care for those identified as belonging to the intersection of all these unmet needs, i.e., the neediest, the problem would by no means be any less complicated, and would be shifted, by definition, to both the definition of a “package” of measures and the identification and geographic demarcation of this same population, not to mention the definition of criteria for access that would allow particularizing the target group (Smolka 1991).

Technical Note

For the current paper, some variables were analyzed for the year corresponding to the latest Brazilian census (2000). The geometric mean annual slum growth rate from 1991 to 2000; head-of-household's mean years of schooling; and four indices for socio-spatial segregation: the dissimilarity index (DI_00); white isolation index (ISO_W_00), non-white isolation index (ISO_NW_00); and the white to non-white exposure index (EX_WNW00). All four indices were calculated by urban Administrative Region (AR).

With the above set of variables, a correspondence analysis was conducted in order to better explore the strongest geographic characteristics in the city of Rio de Janeiro: spatial proximity and social distance. The aim was to identify a typology of segregation capable of discriminating between skin-color and income components. The data set used is shown in Table 2.

Finally, it is important to recall that categorization by skin color in Brazil is a continuum ranging from black to white and including numerous shades and hues, resulting from the fact that Brazilian racial classification uses self-classification by skin color appearance, with subjective aspects of a cultural and socioeconomic order. The most recent study on this issue (1995) reported more than 100 terms and/or expressions for self-definition by skin color. Therefore, the term “non-white population” in this paper includes the following designations: *moreno* and *pardo* (two terms for brown), *moreno-claro* (light-brown), *preto* and *negro* (two terms for black), and *claro* (light).

Results

According to the last census, the majority of the population in the city of Rio de Janeiro was classified (self-classified) as white: 58.5% of the city’s 5,857,895 inhabitants. In only 10 of the city’s 32 Administrative Regions was the white population less than 50%, with special emphasis on the Cidade de Deus Administrative Region, where 36.2% of the population classified themselves as white (Table 3). In the Rocinha slum or *favela* (now the 27th Administrative Region), considered the prototypical Carioca *favela* or an icon for a dual and polarized city (without mediating social categories), the percentage of whites was 53.9%. Note also that in the Madureira Administrative Region, considered by the organized black movement as one of the symbols of Carioca blackness, more than half of the population (54.5%) declared themselves white.

The results of the multiple correspondence analysis, based on the set of variables presented in Table 2, can be useful for a better understanding of the problem. The variables retained by the model, which explain 53.5% of the variance (Graph 1), were: dissimilarity index, white isolation index, white to non-white exposure index, and the slum population growth rate. See Graphs 2, 3, and 4, showing factorial planes 2, 3, and 4 plotted against factorial plane 1, representing only the Administrative Regions that contribute, modularly, more than the mean.

The results indicate that the first factorial plane is structured by opposition between a group of Administrative Regions whose inhabitants constituted the city’s upper and upper-middle class - Barra da Tijuca (24th AR) and Lagoa (6th AR) -, and all the others,

that is, indicating a contrast when the socio-spatial segregation indices are considered (dissimilarity, white isolation, and white/ non-white exposition). Returning to the pyramid metaphor, here we are at the top, where the social strata tend to be lighter-skinned.

The second factorial plane (Graph 2) contrasts regions inhabited by upper, upper-middle, and lower-middle strata (Portuária, Anchieta, Pavuna, and Maré Administrative Regions). The result is consistent with the city's geography, i.e., with the structuring of its periphery by additions of contiguous strips, but not segregated from the geographic point of view.

The third factorial plane (Graph 3) contrasts the lower-middle strata, which occupy the city's central business area (Zona Portuária, Centro, Rio Comprido, and São Cristóvão), and the suburbs of the Central do Brazil railway, historically an organizing axis for the city's peripheries and home to a large non-white cluster in the city.

The fourth factorial plane (Graph 4) is more specific for differentiating the middle from the low strata, a sort of representation of the suburban middle classes (grouping on the one side the Penha, Ilha do Governador, Méier, and Irajá Administrative Regions, and on the other Ramos, Anchieta, Pavuna, and Barra da Tijuca). The presence of Barra da Tijuca, a space for the upper classes, can be explained by the fact that it is one of the most highly differentiated Administrative Regions in socioeconomic terms. It includes the *favelas* with the fastest growth rates in the city.

A general comment on the analysis is that with the exception of the first two factorial planes, where one detects a structure with a more polar tendency, in the others it does not appear to an overstatement that the correspondence is weakened between the socio-spatial segregation indices and the location in space. It is as if we were facing a circularity; in other words, social segregation by color – analyzed here through the segregation indices – is not translated as a distance in space which in turn is expressed by some type of isolation in the city's geography which blocks access by the socially underprivileged strata to the exclusive spaces of the upper and whiter classes. In the

case of Rio de Janeiro, and indeed for the rest of Brazilian society, this distancing takes place through two basic mechanisms: the first, more subtle, which is the establishment of a quite sophisticated system of social navigation which operates by the verticalization of social relations (DaMatta 1988, 1993; Telles 2002; Telles 2003). The second, more recent, is a process of spatial self-segregation by the upper classes in their so-called gated communities (Caldeira 2001).

Discussion of Results

Segregation between whites and non-whites in the city of Rio de Janeiro does not display an immediately discernible geographic expression, as noted in the correspondence analysis presented above. In other words, even though the same phenomenon is observed in Rio de Janeiro as in the overall Brazilian social structure, that is, moving from the base to the top of the pyramid the social strata become whiter, concomitantly there is no evident spatial expression that supports the argument of spatial segregation in the strong sense; on the contrary, the city's spatial proximity is quite expressive, unlike the city of São Paulo, for example.

When we plot head-of-household's mean years of schooling against the segregation indices, the results show, and in more detail, aspects related to social distance and spatial proximity. This is indicated by Graphs 5, 6, and 7.

When the head-of-household's mean years of schooling increases:

- (1) The dissimilarity increases, that is, there is an increase in the percentage of the population from a given color group that should shift in order to reach a more equal population distribution.
- (2) The white to non-white exposure index decreases, indicating a certain spatial isolation.
- (3) The non-white isolation index decreases, confirming the centrality of access to educational resources.

This observation leads us to another question in the debate, namely: it is evident that non-whites have less schooling and earn less than whites, but not that much less than those classified as browns or blacks or other gradations in the rich scale of Brazilian skin colors, such that based on the analyses outlined here, performed with data from the 2000 Census, slightly more than two-fifths of the population in the city of Rio de Janeiro (41.5% - see Table 3) would require an affirmative action program based on skin color, which would not make sense as a public policy. Add to this the fact that this purported target population is scattered throughout the city's territory. Intervening here is a set of questions already highlighted at the beginning of this article about public policy targeting. There is no doubt that a Brazilian style of racism exists, but how does one deal with such racism in the absence of the social reform the country has still not implemented?

Current Perspectives

The format for the debate on the inclusion of non-whites in Brazil has been based predominantly on dualist formulas (Najar 2004). In my view, the issue of racism represents the updating of the hierarchy itself in supposedly egalitarian societies, and it appears with various faces, showing one of its faces according to the social reality, as for example in the recent French case. This aspect of discrimination thus becomes part of the globalized world agenda, increasingly marked by historical hatred, frequently specified by (or based on) ethnicity, social origin, or religious choice, that is increasingly a factor for differentiation in the contemporary world, together with inequalities in both income and access to social benefits.

In Brazil, a country with a long and violent experience with slavery as well as other interethnic conflicts, racism can take on other forms, against Northeasterners, for example, a form of racism as condemnable as that against non-whites. Therefore it might be better to invest in a broad and profound debate considering the characteristics and nature of inequalities in lifetime results and opportunities, changing the focus of the discussion without reducing everything to the issue of quotas. University enrollment quotas can hardly be said to cover the set of possibilities for affirmative action policies, besides running the risk of being absolutely artificial and arbitrary, particularly considering the substantive issues involved, all deriving from a project for social justice.

One should consider, for example, that such quotas may artificially ensure enrollment, but not continuation, in a university course, since historical prejudices cannot be repaired exclusively by formal will.

In the case of the city of Rio de Janeiro, one notes that existing inequalities are predominantly of a social rather than ethnic nature. The spatial expression of this model is imprinted in the city's geographical territory through a complex system of clusters and peripheries, forming a quite diverse mosaic, where the principal mechanism for interaction among the various social strata is a sophisticated system of social navigation.

In the context of the United States, the quotas solution may have been a response to the one drop blood theory, according to which the existence of a single African ancestor in an individual's genealogical tree is sufficient to classify him or her as black, leading to a racialization of the issue in a context where inequality was understood on the basis of civil rights. However, in Brazil the political, sociological, and cultural context is quite different.

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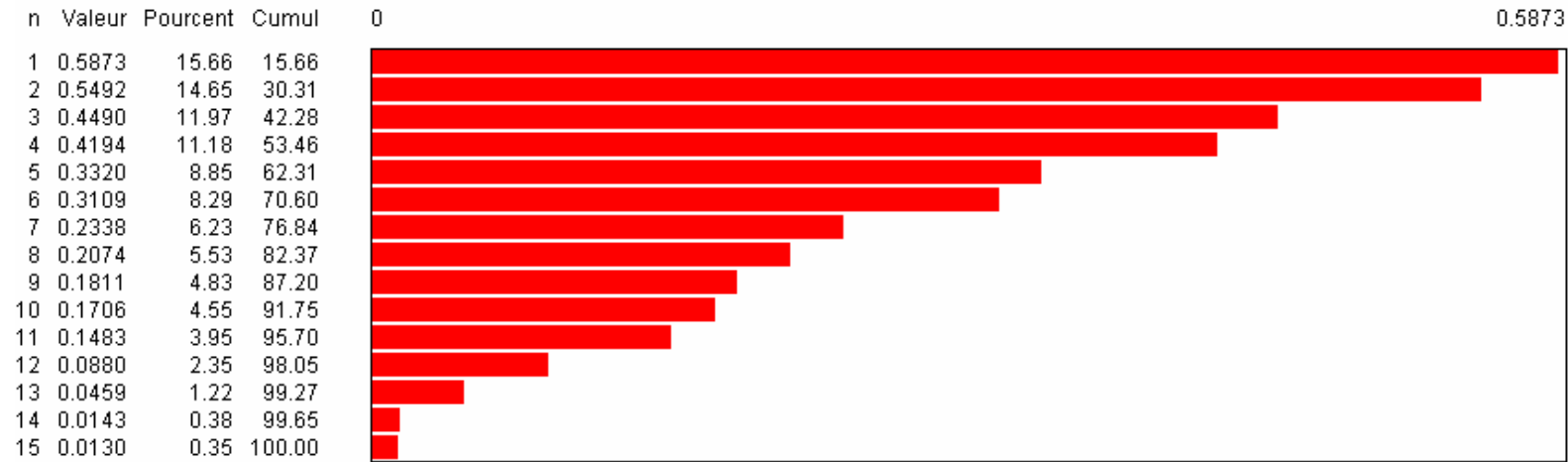
Table 2						
Variables Analyzed						
Adm. Region Number	Adm. Region Name	Head-of-household's mean years of schooling	Dissimilarity Index	White isolation index	Non-white isolation index	Non-white exposure index
RA_NUM	RA_NAME	HEAD_SCH_00	DI_00	ISO_W_00	ISO_NW00	EX_NW00
1	Portuária	6,05	0,0894	0,2762	0,2341	0,2348
3	Rio Comprido	8,06	0,1227	0,2302	0,1134	0,1212
4	Botafogo	12,05	0,1726	0,1163	0,0216	0,0211
5	Copacabana	11,83	0,1844	0,1530	0,0307	0,0275
6	Lagoa	12,44	0,4005	0,1124	0,0672	0,0321
7	São Cristovão	7,17	0,1500	0,2529	0,1609	0,1740
8	Tijuca	11,24	0,2155	0,1904	0,0619	0,0483
9	Vila Isabel	10,98	0,1367	0,2244	0,0813	0,0688
10	Ramos	7,67	0,2022	0,1271	0,1173	0,1019
11	Penha	7,29	0,1465	0,0658	0,0634	0,0570
12	Inhaúma	7,86	0,1971	0,1007	0,0928	0,0773
13	Méier	9,35	0,1470	0,0633	0,0316	0,0296
14	Irajá	8,23	0,1543	0,0956	0,0632	0,0610
15	Madureira	7,9	0,0717	0,0564	0,0482	0,0468
16	Jacarepagagua	8,37	0,1682	0,0708	0,0544	0,0491
17	Bangu	6,84	0,0886	0,0507	0,0610	0,0594
18	Campo Grande	7,19	0,2032	0,0465	0,0437	0,0336
19	Santa Cruz	6,32	0,0874	0,0632	0,0913	0,0867
20	Governador	8,8	0,1797	0,0825	0,0433	0,0385
22	Anchieta	7,35	0,0705	0,1303	0,1441	0,1405
24	Barra da Tijuca	11,15	0,4378	0,3522	0,0570	0,0491
25	Pavuna	6,58	0,0677	0,1410	0,1494	0,1515
30	Maré	5,04	0,0447	0,1253	0,1511	0,1530
33	Realengo	7,54	0,0347	0,0390	0,0419	0,0231
Sources:	Instituto Municipal de Urbanismo Pereira Passos (Armazém de Dados)					
	Instituto Brasileiro de Geografia e Estatística - FIBGE, Censo 2000					
	SIM - Sistema de Informação de Mortalidade, DATASUS					
	SINASC - Sistema de Informações de nascidos Vivos, DATASUS					

Table 3 Population by color of skin by administrative region, City of Rio de Janeiro

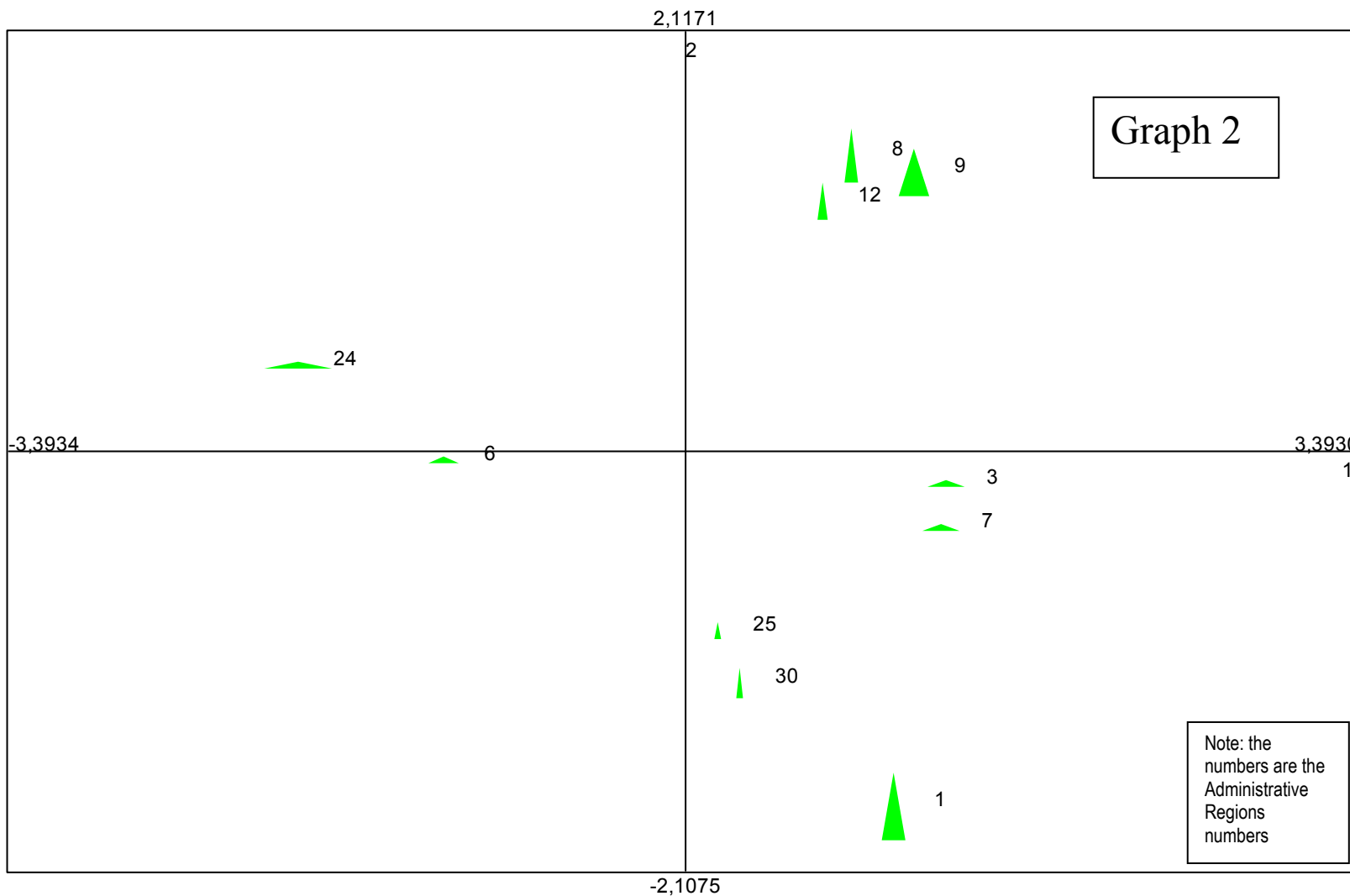
Administratives Regions	Total		Colour of Skin											
			White		Black		Yellow		Brown		Indigenous		Ignored	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Rio de Janeiro (1)	5 857 895	100,0	3 429 101	58,5	552 715	9,4	13 004	0,2	1 803 760	30,8	15 621	0,3	43 694	0,7
I Portuária	39 968	100,0	21 085	52,8	3 382	8,5	126	0,3	14 868	37,2	170	0,4	337	0,8
II Centro	39 132	100,0	26 120	66,7	3 077	7,9	100	0,3	9 333	23,9	204	0,5	298	0,8
III Rio Comprido	73 736	100,0	45 045	61,1	8 142	11,0	221	0,3	18 271	24,8	130	0,2	1 927	2,6
IV Botafogo	238 799	100,0	196 466	82,3	8 768	3,7	1 791	0,8	28 892	12,1	722	0,3	2 160	0,9
V Copacabana	161 175	100,0	134 558	83,5	6 028	3,7	493	0,3	17 905	11,1	509	0,3	1 682	1,0
VI Lagoa	174 058	100,0	148 370	85,2	5 558	3,2	429	0,2	17 981	10,3	294	0,2	1 426	0,8
VII São Cristóvão	70 589	100,0	38 524	54,6	8 759	12,4	164	0,2	22 172	31,4	378	0,5	592	0,8
VIII Tijuca	180 909	100,0	143 338	79,2	11 013	6,1	560	0,3	24 165	13,4	343	0,2	1 490	0,8
IX Vila Isabel	186 010	100,0	144 537	77,7	10 702	5,8	458	0,2	28 503	15,3	450	0,2	1 360	0,7
X Ramos	150 399	100,0	89 696	59,6	13 021	8,7	232	0,2	45 817	30,5	472	0,3	1 161	0,8
XI Penha	318 503	100,0	169 219	53,1	37 200	11,7	263	0,1	108 287	34,0	1 030	0,3	2 504	0,8
XII Inhaúma	130 632	100,0	77 974	59,7	13 187	10,1	366	0,3	37 439	28,7	399	0,3	1 267	1,0
XIII Méier	398 835	100,0	265 891	66,7	35 966	9,0	996	0,2	93 179	23,4	847	0,2	1 956	0,5
XIV Irajá	202 963	100,0	118 206	58,2	21 387	10,5	475	0,2	60 175	29,6	421	0,2	2 299	1,1
XV Madureira	374 205	100,0	203 845	54,5	45 313	12,1	414	0,1	121 564	32,5	921	0,2	2 148	0,6
XVI Jacarepaguá	469 627	100,0	282 088	60,1	41 654	8,9	1 155	0,2	140 042	29,8	1 356	0,3	3 332	0,7
XVII Bangu	420 501	100,0	190 861	45,4	54 083	12,9	680	0,2	171 383	40,8	900	0,2	2 594	0,6
XVIII Campo Grande	484 358	100,0	230 216	47,5	49 694	10,3	579	0,1	200 965	41,5	1 106	0,2	1 798	0,4
XIX Santa Cruz	311 286	100,0	131 119	42,1	37 933	12,2	544	0,2	139 069	44,7	838	0,3	1 783	0,6
XX Ilha do Governador	211 465	100,0	137 900	65,2	12 522	5,9	516	0,2	58 368	27,6	909	0,4	1 250	0,6
XXI Paqueta	3 419	100,0	2 165	63,3	374	10,9	-	0	876	25,6	4	0,1	-	-
XXII Anchieta	154 605	100,0	74 079	47,9	16 930	11,0	262	0,2	61 737	39,9	481	0,3	1 116	0,7
XXIII Santa Teresa	41 135	100,0	25 311	61,5	4 071	9,9	94	0,2	11 294	27,5	-	0	365	0,9
XXIV Barra da Tijuca	174 349	100,0	134 857	77,3	7 524	4,3	567	0,3	29 992	17,2	217	0,1	1 192	0,7
XXV Pavuna	197 065	100,0	92 125	46,7	25 413	12,9	402	0,2	76 076	38,6	541	0,3	2 508	1,3
XXVI Guaratiba	101 202	100,0	49 029	48,4	9 202	9,1	66	0,1	41 921	41,4	223	0,2	761	0,8
XXVII Rocinha	56 334	100,0	30 338	53,9	4 887	8,7	-	0	20 519	36,4	39	0,1	551	1,0
XXVIII Jacarezinho	36 455	100,0	14 946	41,0	5 848	16,0	26	0,1	15 202	41,7	83	0,2	350	1,0
XXIX Complexo do Alemão	65 022	100,0	27 721	42,6	8 230	12,7	165	0,3	28 249	43,4	228	0,4	429	0,7
XXX Maré	113 803	100,0	50 222	44,1	10 595	9,3	390	0,3	51 275	45,1	405	0,4	916	0,8
XXXIII Realengo	239 143	100,0	119 488	50,0	26 272	11,0	329	0,1	90 532	37,9	812	0,3	1 710	0,7
XXXIV Cidade de Deus	38 012	100,0	13 749	36,2	5 968	15,7	129	0,3	17 692	46,5	72	0,2	402	1,1

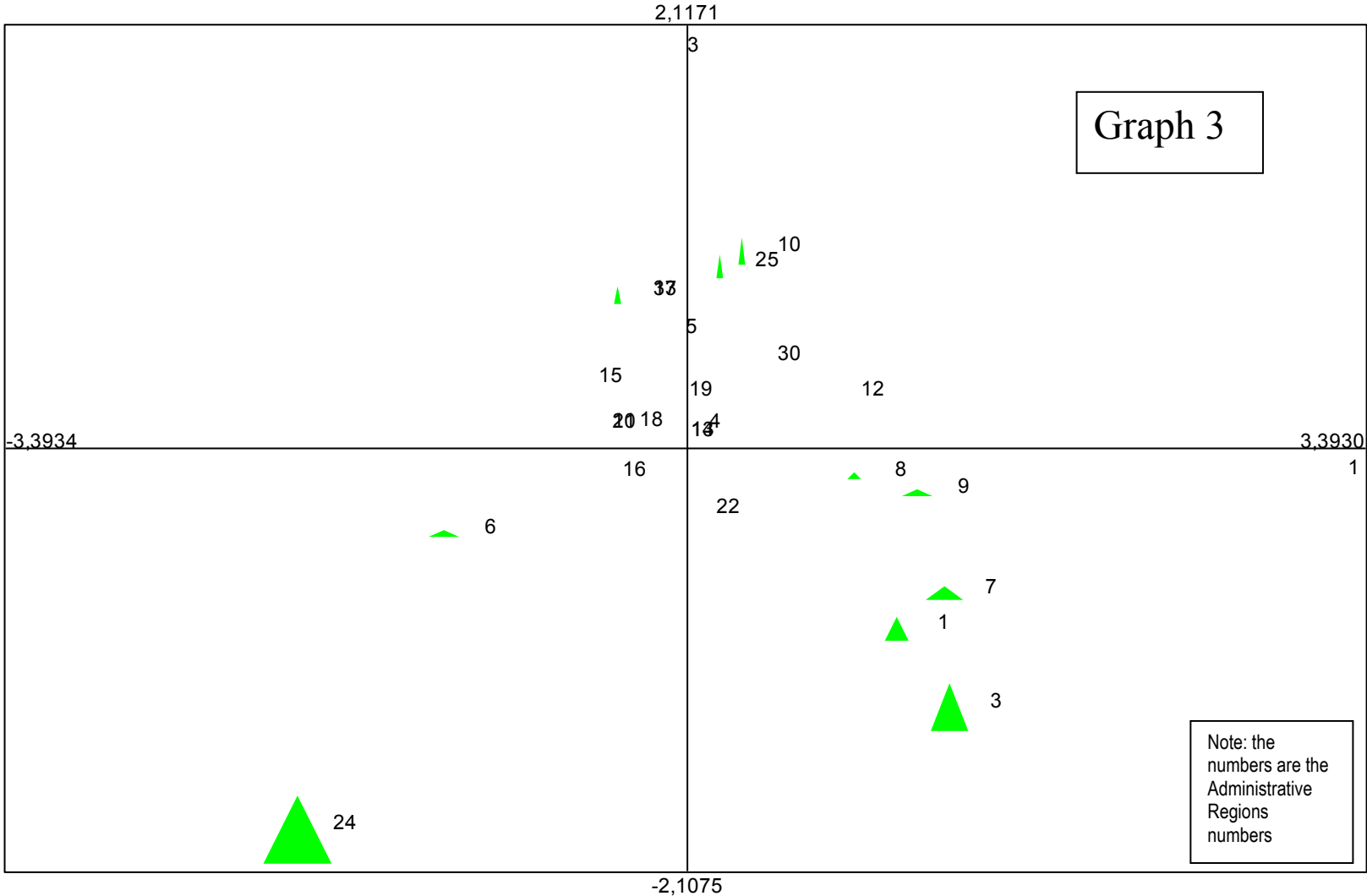
Source: Instituto Brasileiro de Geografia e Estatísticas -IBGE. 2000 Census.

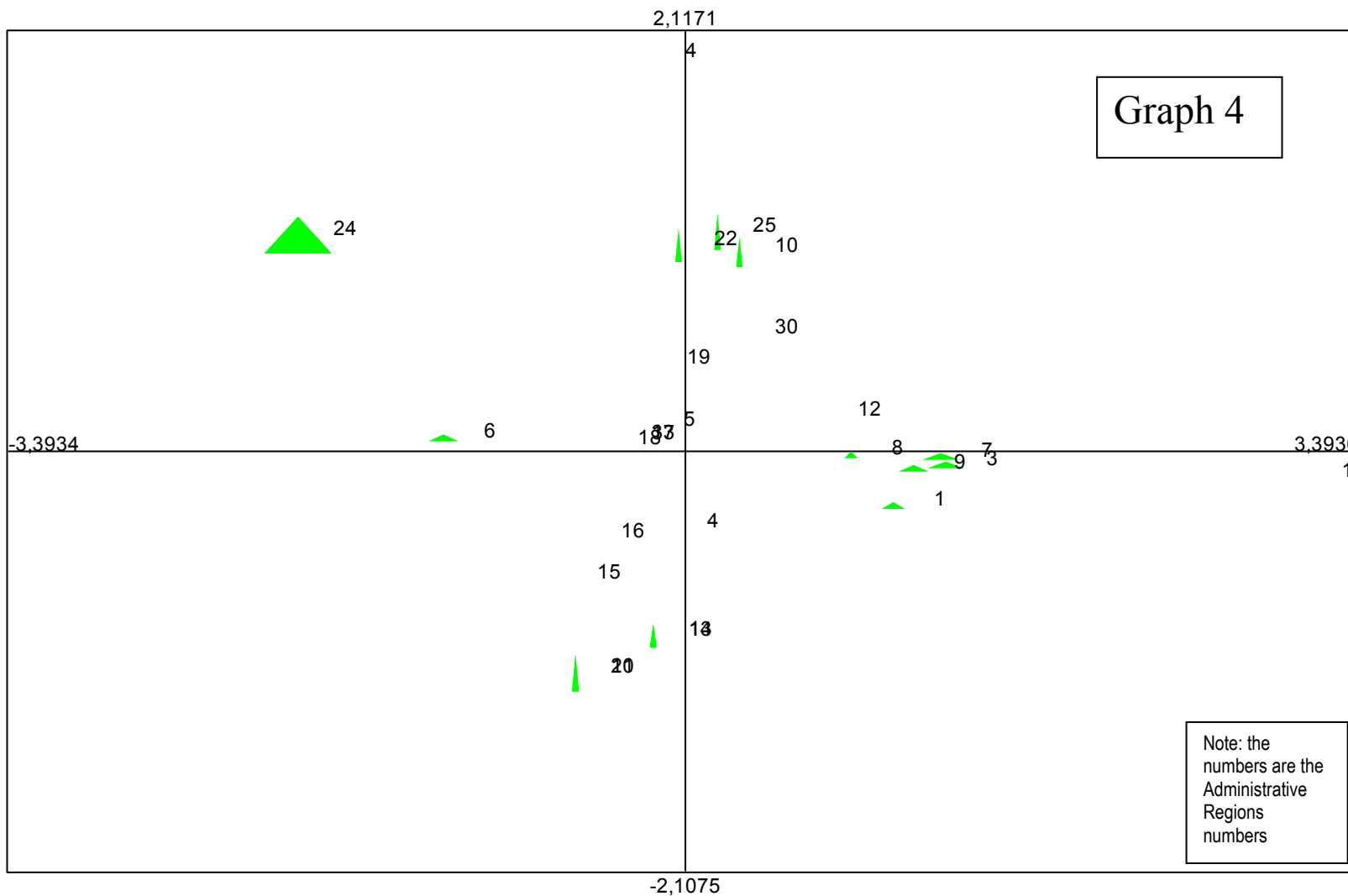
Graph 1: "Scree" Plot

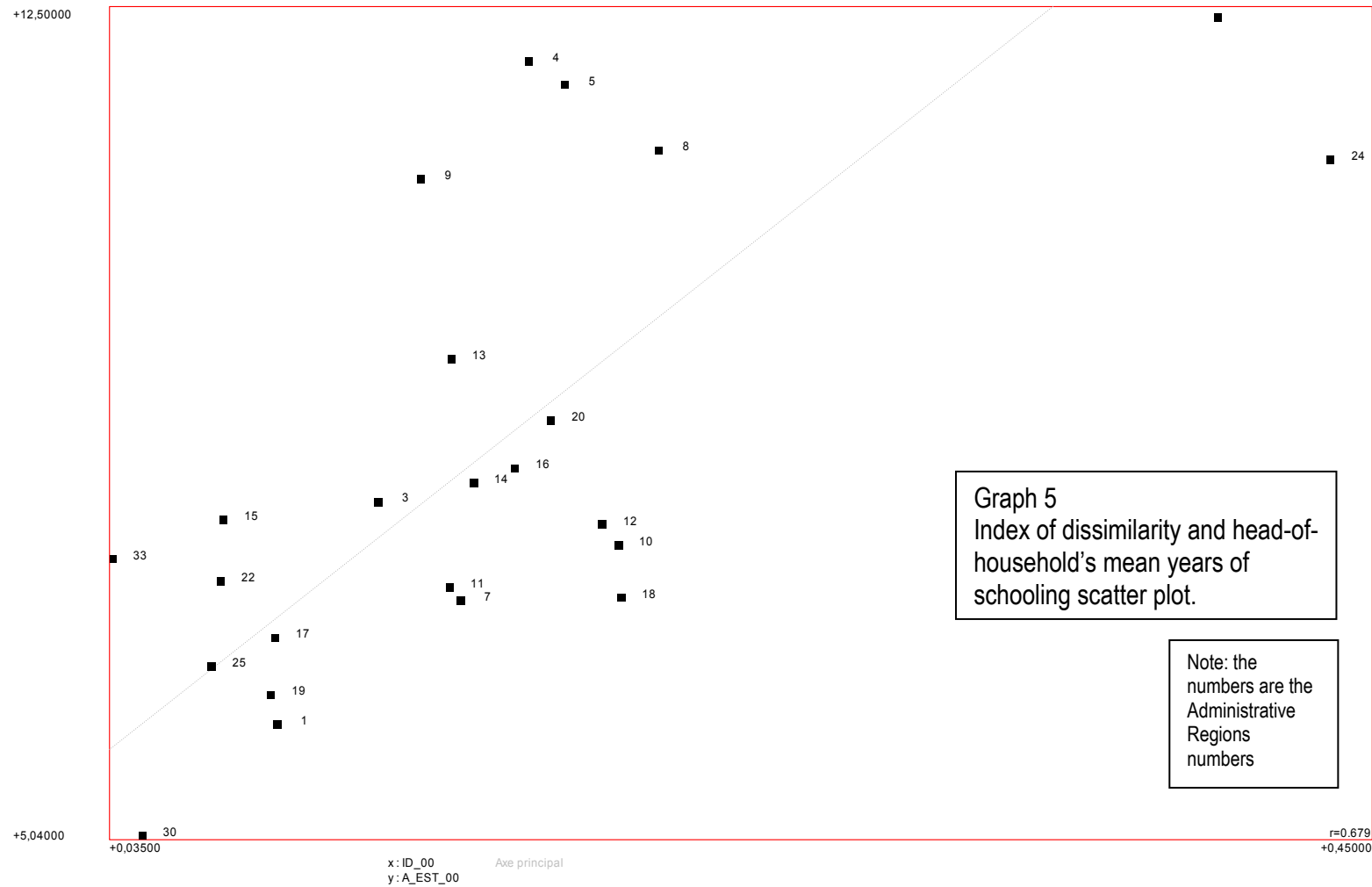


Variance totale = 3.8









Graph 5
Index of dissimilarity and head-of-household's mean years of schooling scatter plot.

Note: the numbers are the Administrative Regions numbers

