

## Lab 7

There are 3 goals for this lab:

- 1) Calculate the level of residential segregation and isolation in Detroit (and your metro) in 2000, using the index of dissimilarity and the isolation index.
- 2) Open up the MCSUI data set and make a table of preferences for residential segregation by race.
- 3) make a map of demographic changes in Detroit (and your metropolitan area from Lab 6) between 1990 and 2000.

Homework:

- a) Repeat Part 1 A and B for your metro area...find the index of black white dissimilarity.
- b) Repeat Part 2 for Hispanics, **GHNEIAT1 page 112, gicrace==2.**
- c) Repeat Part 3 for your metro area...make a map of population change for whites and blacks (\*\*note only if we finish this in lab).

### Part 1

1A) The index of dissimilarity (for blacks and whites) is  $.5 \sum \left| \left( \frac{w_i}{\sum w_i} \right) - \left( \frac{b_i}{\sum b_i} \right) \right|$

where  $w_i$  is the white population of tract  $i$  and  $b_i$  black population of tract  $i$ . This is easy to calculate in Stata using the following steps:

```
egen btot=sum(black)
* note use egen not gen. See help egen for an explanation.
egen wtot=sum(white)
gen bpct=black/btot
gen wpct=white/wtot

gen dif=abs(wpct-bpct)
egen d=sum(dif)
replace d=d*.5
di d
```

write these steps out as a do-file and calculate the segregation level for Detroit and your metro.

1B) The "isolation index" is simply the proportion of black residents in the average black resident's census tract. This can also be easily calculated using Stata:

```
gen pctblk=black/pop
sum pctblk
```

sum pctblk [w=black]

\*\*\*explain why it is important to weight by black

## Part 2

a simple tabulation of preferences of residential segregation by race.

- 1) look at page 105 of the code book for the codes and explanation for gicrace and gicformb and on page 106 for gbneiat1.
- 2) open up mcsui\_hh2.dta
- 3) tab gbneiat1 city if gicrace==1 & gicformb==1, col
- 4) tab gbneiat1 gicformb if gicrace==1, col

what conclusions can we draw from this tabulation?

## Part 3

In part 1, we will use 3 data sources to add information on 1990 census tracts to the 2000 census tract map we made in lab 6.

\*\*\*\*NOTE: when you do this for your own metro, you will need to make several easy changes to lab7.do, stf3a\_recode.do, and relate.dct because the names of your files will be a little different. I have circled where changes need to be made on the hardcopies of these files.

i) the 2000 STF1a (aggregate census data) file that we used last week (tgr26000sf1trt.dbf in the case of Michigan/Detroit)

ii) a 1990 STF3a file that you will download from the CDC (stf3a\_26.dbf in the case of Michigan/Detroit) (this is not the only place you can get it).

iii) a conversion file (mi26pop.txt in the case of Michigan/Detroit) that you will download from the Census Bureau that converts the 1990 census tracts into 2000 census tracts. This is key, because the geographic definition of a census tract does not necessarily stay the same over time. This conversion file allows use to translate the 1990 tracts into 2000 tracts based on the degree of overlap between the tracts. For instance, if 1990 Tract A was split into 200 Tracts B and C, with 60% of the population going to B and 40% going to C, then the conversion file will split A into B and C, weighting the demographic information by 60% and 40% respectively.

### Steps for Part 3

1. Take the 2000 STF1a file and convert it to Stata using DBMS copy. Name it tgr26000sf1trt.dta and put it in the lab7 directory

2. Download the 1990 STF3a file from <http://www2.cdc.gov/nceh/lead/census90/house11/download.htm> (stf3a\_26.zip in this case), save it to the lab7 directory and unzip it.

FYI, a STF3a codebook can be found at:

<http://www2.cdc.gov/nceh/lead/census90/house11/housdesc.htm>

STF3A file

Summary levels:

050: County

140: Census Tracts

150: Census Block Groups

3. Convert the 1990 STF3a file to Stata, save it as stf3a\_26.dta

4. Download the conversion file from

[http://www.census.gov/geo/www/relate/rel\\_tract.html](http://www.census.gov/geo/www/relate/rel_tract.html)

for the state of Michigan, mi26pop.txt (back click and save to Lab7)

Important note: in general, download the "pop" one.

5. run the file lab7.do in Stata. This will save the file add90\_mi

which will have the new variables:

stfid	str12	%12s	
medinc	float	%19.5f	(mean) medinc
pop90	double	%19.5f	(rawsum) pop
white90	double	%19.5f	(rawsum) white
black90	double	%19.5f	(rawsum) black
hispanic90	double	%19.5f	(rawsum) hispanic
ch_pop	float	%9.0g	
ch_wh	float	%9.0g	
ch_bl	float	%9.0g	
ch_hisp	float	%9.0g	
+ a bunch of variables c_*			

Ch\_pop means the change in the tract-level population between 1990 and 2000 etc.

5. Convert this data set, add90\_mi.dta to dbf format using dbms copy.

6. Open up Arcview and open up the map for Detroit. Then, add the new data, add90\_mi.dbf, as a table. Then merge it to the attributes file, as we have done in the previous labs.

7. Using c\_blp (increase in black population) and c\_bln (decrease in black population) make a map of black population change 1990-2000. Use red dots for increase and green dots for decrease.

8. Repeat #7 for whites.

```
**-----lab7.do-----
```

```
set more off
```

```
clear
```

```
use tgr26000sf1trt
```

```
sort stfid
```

```
save, replace
```

```
do stf3a_recode
```

```
clear
```

```
infix using relate.dct
```

```
gen str12 tract=state90+county90+tract90+"."+tractsuf90
```

```
gen str12 tract2000=state00+county00+tract00+"."+tractsuf00
```

```
gen str11 stfid=state00+county00+tract00+tractsuf00
```

```
sort tract
```

```
merge tract using mi90
```

```
tab _merge
```

```
list tract cnty tractbna _merge pop pop90 if _merge~=3
```

```
drop if _merge~=3
```

```
* if you were doing this for real, you would want to figure out what is going on  
* with the small number of tracts that don't match (_merge not equal to 3)
```

```
replace pct1990=pct1990/1000
```

```
for var pop white black asian hispanic: replace X=X*pct1990
```

```
collapse (mean) medinc (rawsum) pop90=pop white90=white black90=black /*  
*/ asian90=asian hispanic90=hispanic [iw=pct1990], by(stfid)
```

```
merge stfid using tgr26000sf1trt
```

```
tab _merge
```

```
keep if _merge==3
```

```
gen ch_pop=pop2000-pop90
```

```
gen ch_wh=white-white90
```

```
gen ch_bl=black-black90
```

```
gen ch_hisp=hispanic-hispanic90
```

```
* note the problem with the inclusive and exclusive definition of hispanic
```

```
sum ch_*
```

```
keep stfid white90 black90 hispanic90 medinc pop90 ch_*
```

```
sort stfid
```

```
save add90_mi, replace
```



Named at the end of  
stf3a\_recode



\*\*\*-----stf3a\_recode.do-----

use(stf3a\_26)



/\*

p0010001 persons: total

p0100001 persons of hispanic origin: total

p0120001 hispanic origin by race: not of hispanic origin - white

p0120002 hispanic origin by race: not of hispanic origin - black

p0120003 hispanic origin by race: not of hispanic origin - american indian, eskimo

p0120004 hispanic origin by race: not of hispanic origin - asian or pacific islander

p0120005 hispanic origin by race: not of hispanic origin - other race

p080a001 household income in 1989: median

p1170001 poverty status in 1989 by age: above poverty level - under 5 years

p1170002 poverty status in 1989 by age: above poverty level - 5 years

p1170013 poverty status in 1989 by age: below poverty level - under 5 years

p1170014 poverty status in 1989 by age: below poverty level - 5 years

\*/

keep if sumlev=="140"

rename p0010001 zpop

rename p0100001 zhispanic

rename p0120001 white

rename p0120002 black

rename p0120003 amindian

rename p0120004 asian

rename p0120005 other

rename p080a001 medinc

rename p1170001 apov\_u5

rename p1170002 apov\_a5

rename p1170013 bpov\_u5

rename p1170014 bpov\_a5

drop p\*

drop h\*

rename zpop pop

rename zhispanic hispanic

sort tract

save mi90, replace





```
infix dictionary using mi26pop.txt {  
  str2 state90      1-2  
  str3 county90    3-5  
  str4 tract90     6-9  
  str2 tractsuf90  10-11  
  str1 tractpart90 12  
  pop90            13-21  
  pct1990          22-25  
  str2 state00     26-27  
  str3 county00   28-30  
  str4 tract00    31-34  
  str2 tractsuf00 35-36  
  str1 tractpart00 37  
  pop00           38-46  
  pct00           47-50  
  area00          51-59  
  meters          60-73  
  str2 state      74-75  
  str60 county    76-135  
}
```

<b>G5C: GWLCMAR3</b>		What about (AREA3)?		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
1	Welcome	391	969	1802	561	3723		
2	Upset	850	117	611	949	2527		
3	If vol: Wouldn't care	107	318	1012	89	1526		
7	Refused	0	0	17	0	17		
8	Don't Know	168	87	580	175	1010		
9	Missing	27	37	3	46	113		
		1543	1528	4025	1820	8916		

<b>G5D: GWLCMAR4</b>		What about (AREA4)?		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
1	Welcome	259	586	1697	1160	3702		
2	Upset	1091	528	751	293	2663		
3	If vol: Wouldn't care	69	283	892	142	1386		
7	Refused	0	0	17	0	17		
8	Don't Know	104	87	662	180	1033		
9	Missing	20	44	6	45	115		
		1543	1528	4025	1820	8916		

<b>G5E: GWLCMAR5</b>		What about (AREA5)?		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
1	Welcome	577	338	1643	1145	3703		
2	Upset	549	863	871	289	2572		
3	If vol: Wouldn't care	170	184	932	138	1424		
7	Refused	0	0	17	0	17		
8	Don't Know	225	98	557	201	1081		
9	Missing	22	45	5	47	119		
		1543	1528	4025	1820	8916		

<b>G5F: GWLCMAR6</b>		What about (AREA6)?		<b>Atl</b>	<b>LA</b>	<b>Total</b>
1	Welcome	475	1395	1870		
2	Upset	643	1140	1783		
3	If vol: Wouldn't care	263	939	1202		
7	Refused	0	17	17		
8	Don't Know	103	531	634		
9	Missing	44	3	47		
		1528	4025	5553		

<b>G5G: GWLCMAR7</b>		What about (AREA7)?		<b>LA</b>	<b>Total</b>
1	Welcome		1629	1629	
2	Upset		791	791	
3	If vol: Wouldn't care		922	922	
7	Refused		17	17	
8	Don't Know		662	662	
9	Missing		4	4	
			4025	4025	

**G6. Interviewer Check: Respondent's Race**

<b>G6: GICRACE</b>		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
1	Non-Hispanic Black (Detroit and Atlanta: Black)	750	834	1118	465	3167
2	Hispanic {Go to G14}	0	0	994	701	1695
3	Asian {Go to G21}	0	0	1052	38	1090
4	Non-Hispanic White (Detroit and Atlanta: Non-Black) {Go to G28}	793	692	861	589	2935
5	Other {Go to G40}	0	0	0	27	27
9	Missing	0	2	0	0	2
		1543	1528	4025	1820	8916

**G7. Interviewer Check: R Is Black, Form For G8-G13**

<b>G7: GICFORMB</b>		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
0	Logical Skip---2-5 in G6	793	692	2907	1355	5747
1	Form X	750	834	361	249	2194
2	Form Y	0	0	380	105	485
3	Form Z	0	0	377	111	488
9	Missing	0	2	0	0	2
		1543	1528	4025	1820	8916

**G8.** Now I would like you to imagine that you have been looking for a house and have found a nice house you can afford. This house could be located in several different types of neighborhoods as shown on these cards (SHOW CARDS B-SERIES.) Some of the neighborhoods have more (FORM) families and others have more black families.

The black houses represent black families and the (Form X: white, Form Y: dark gray, Form Z: light gray) houses represent (Form X: white, Form Y: Hispanic, Form Z: Asian) families.

Would you look through the cards and rearrange them so that the neighborhood that is \*most\* attractive to you is on top, the next most attractive second, and so on down the line with the least attractive neighborhood on the bottom.

<b>G8A: GBNEIAT1</b>		First (Most attractive)				
		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
0	Logical Skip--2,3,4 or 5 in G6	778	692	2907	1355	5732
1	Neighborhood 1 (All Black houses)	114	255	263	70	702
2	Neighborhood 2 (10 Black houses)	164	170	309	109	752
3	Neighborhood 3 (7 Black houses)	412	354	460	239	1465
4	Neighborhood 4 (2 Black houses)	42	24	42	28	136
5	Neighborhood 5 (No Black houses)	12	16	25	8	61
7	Refused	0	0	15	0	15
8	Don't Know	0	4	4	0	8
9	Missing	21	13	0	11	45
		1543	1528	4025	1820	8916

<b>G8B: GBNEIAT2</b>		Second				
		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
0	Logical Skip--2,3,4 or 5 in G6	778	692	2907	1355	5732
1	Neighborhood 1 (All Black houses)	33	66	107	34	240
2	Neighborhood 2 (10 Black houses)	441	522	606	239	1808
3	Neighborhood 3 (7 Black houses)	163	153	271	101	688
4	Neighborhood 4 (2 Black houses)	89	69	102	61	321
5	Neighborhood 5 (No Black houses)	15	7	13	16	51
7	Refused	0	0	15	0	15
8	Don't Know	0	5	4	0	9
9	Missing	24	14	0	14	52
		1543	1528	4025	1820	8916

<b>G8C: GBNEIAT3</b>		Third				
		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
0	Logical Skip--2,3,4 or 5 in G6	778	692	2907	1355	5732
1	Neighborhood 1 (All Black houses)	219	170	219	100	708
2	Neighborhood 2 (10 Black houses)	92	81	114	62	349
3	Neighborhood 3 (7 Black houses)	150	300	359	99	908
4	Neighborhood 4 (2 Black houses)	253	243	374	166	1036
5	Neighborhood 5 (No Black houses)	23	22	33	21	99
7	Refused	0	0	15	0	15
8	Don't Know	0	5	4	0	9
9	Missing	28	15	0	17	60
		1543	1528	4025	1820	8916

<b>G8D: GBNEIAT4</b>		Fourth				
		<b>Det</b>	<b>Atl</b>	<b>LA</b>	<b>Bos</b>	<b>Total</b>
0	Logical Skip--2,3,4 or 5 in G6	778	692	2907	1355	5732
1	Neighborhood 1 (All Black houses)	243	231	309	153	936
2	Neighborhood 2 (10 Black houses)	37	41	57	30	165
3	Neighborhood 3 (7 Black houses)	9	8	8	9	34
4	Neighborhood 4 (2 Black houses)	347	468	571	178	1564
5	Neighborhood 5 (No Black houses)	91	66	153	76	386
7	Refused	0	0	15	0	15
8	Don't Know	0	5	5	0	10
9	Missing	38	17	0	19	74
		1543	1528	4025	1820	8916