

pretty (and smart)

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## outline

looks matter

general: displaying data (in a map)

maps specifically

but wait, smart is important too! see final\_project.pdf

examples from past

finish early; i will walk around and ans 1:1 q&a



## labs?

- ◊ building a computer lab on 1st fl of 321 cooper in the back
- ◊ say mon, tue or thu at 11 or 2?

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## “looks vs brains”

- ◊ of course, good idea for a map is the key
  - and the right variables (eg measurement, standardization)
  - and good/quality data
- ◊ and at the right level (resolution, aggregation)
- ◊ but if your map is ugly, people won't bother to try to understand its “internal beauty”
  - mapping is about the “visual appearance”
- ◊ it has to be pretty; yes, “looks” comes first !

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## **understand your data**

- ◊ ok, so you've got some data—what next?
- ◊ understand your data !
- ◊ usually the best way to understand it is to graph it
- ◊ you can have scatterplots, histograms, bar charts, etc
- ◊ this is GIS class, so we will be making maps
- ◊ but by all means do other statistics as well

## graphics and data management

- ◊ i was emphasizing importance of understanding your data
- ◊ graphics is a great way to visualize/understand data
- ◊ data are numbers, usually many and in a matrix
  - graphics is a great tool to allow humans to comprehend those many numbers
  - if you look at numbers you will be slower in understanding them than when looking at a picture
- ◊ pictures are not less “scientific” than numbers
- ◊ again, ask questions / tell me to go slower if needed (i have an impression that i go too fast sometimes)

## references/links

- ◊ Tufte (multiple) <http://www.edwardtufte.com/tufte/>
- ◊ Kosslyn “Clear and to The Point”  
[http://www.amazon.com/  
Clear-Point-Psychological-Principles-Presentati  
dp/0195320697](http://www.amazon.com/Clear-Point-Psychological-Principles-Presentati/dp/0195320697)

## be simple

- ◊ everything should be made as simple as possible, but not one bit simpler
- ◊ avoid data padding – present only data needed for a specific purpose
- ◊ (in general, avoid stats padding; use appendix if necessary)
- ◊ avoid clutter – put in a single graph only the data that are highly related and must be compared
- ◊ put data into appendix if it is not very relevant but may be useful
  - people looking for extra information will find it
  - people interested in main story will not get distracted

## avoid visual clutter

- ◊ all parts of graph should be meaningful
- ◊ good practices:
  - do not use shades
  - do not use fancy colors
  - do not use any decoration

## some good practices

- ◊ use graphs often
- ◊ never use chart junk
- ◊ do not use graphs if they take up more space than text or numbers
- ◊ avoid graph padding and within-graph data padding

## use space efficiently

- ◊ get rid of white space, blow up your map
  - it should be as big as possible, use all space
- ◊ put legend in an efficient way
  - eg in Ocean or in forest, etc

## balance

- ◊ keep balance in:
- ◊ colors (say either use toned down colors for everything or use stark contrasts, etc)
- ◊ fonts: titles, notes, labels etc should be proportional
- ◊ thickness of lines
- ◊ and everything else
- ◊ in general: rather use less ink than more

## one v several graphs/maps

- ◊ usually to convey an idea, you may need several graphs/maps
- ◊ say if you want to show deprivation in SJ:
  - eg low educ, poverty, crime, etc etc
  - but can also show a summary, eg an index
- ◊ sometimes better in one graph/map
  - e.g showing change: better one than 2; just calc chng var

## think about it/meaning

- ◊ ok, you've got the map
- ◊ now think about it...
- ◊ what does it mean?
  - (beyond technical correctness; lack of mistakes)
  - eg is it interesting or informative or helpful... etc?
  - if not, drop it and produce a better map
- ◊ in this class i will be grading substantive meaning, too

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## let's load our favorite counties data

- ◊ <https://docs.google.com/uc?id=1xJDhcRCkgv7k4tNCa720og5bohV6dTb2&export=download>
- ◊ and let's look more at the style tab
- ◊ see colors, transparencies, symbols, etc

## some examples

- ◊ we can have a look at some examples and discuss if they are pretty
- ◊ [http://twistedsifter.com/2013/08/  
maps-that-will-help-you-make-sense-of-the-world/](http://twistedsifter.com/2013/08/maps-that-will-help-you-make-sense-of-the-world/)

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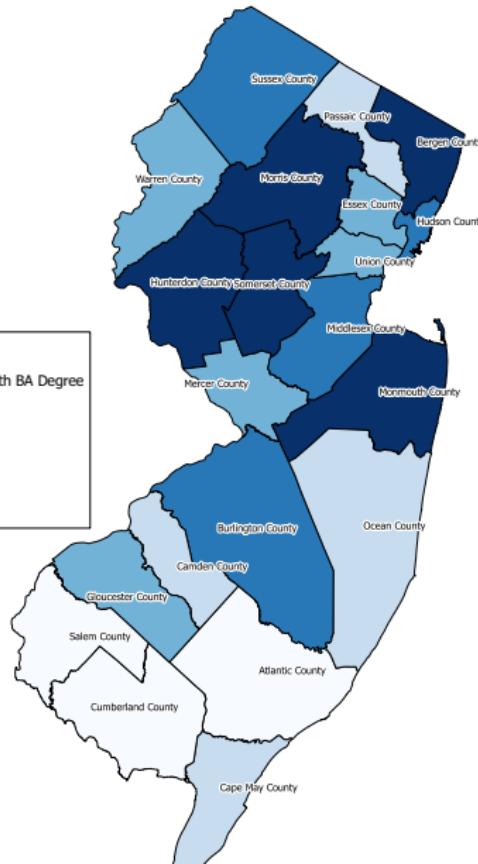
examples from past

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## NJ counties

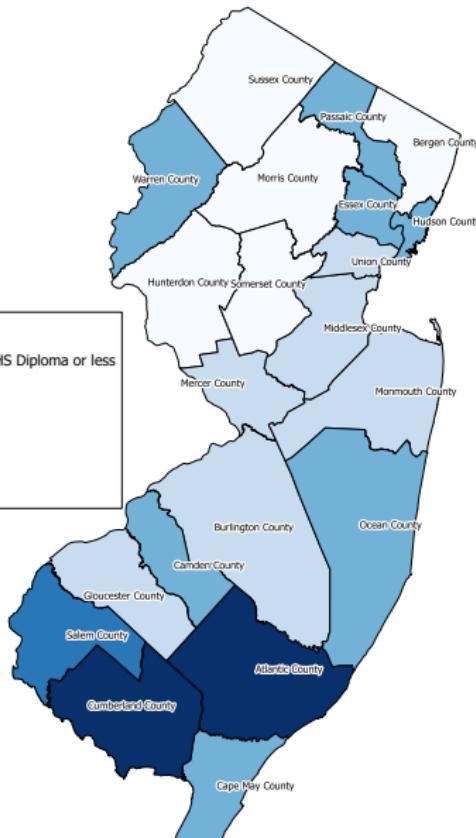
- ◊ many variables about similar topic: education
  - great: triangulation
- ◊ good use of space, could be little better
- ◊ nice color ramp
- ◊ good fonts, maybe title little smaller
- ◊ fewer decimal points !
- ◊ could list data source (but may do it elsewhere, say in paper)

## New Jersey Residents with Bachelor Degree or Higher



examples from past

## New Jersey rate of residents earning less than a High School Diploma



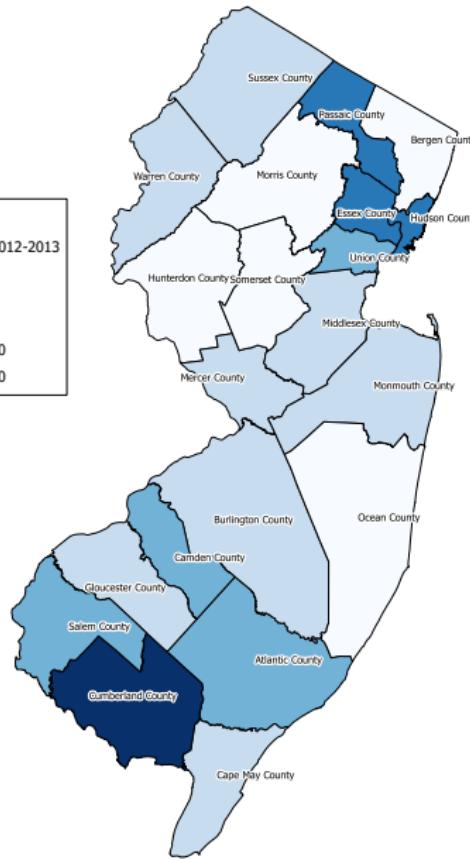
examples from past

## 2012-2013 NJ K-12 Education Aid per resident

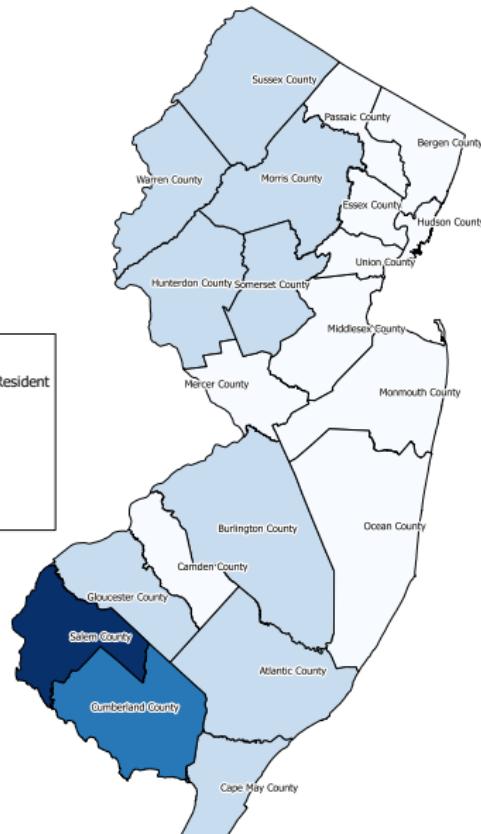
### Legend

NJ State Aid Per Resident 2012-2013

- 226.0000 - 609.6000
- 609.6000 - 993.2000
- 993.2000 - 1376.8000
- 1376.8000 - 1760.4000
- 1760.4000 - 2144.0000



## NJ 2013 Transportation Aid Per Resident



### Legend

#### NJ 2013 Transportation Aid Per Resident

- 5.0000 - 9.6000
- 9.6000 - 14.2000
- 14.2000 - 18.8000
- 18.8000 - 23.4000
- 23.4000 - 28.0000

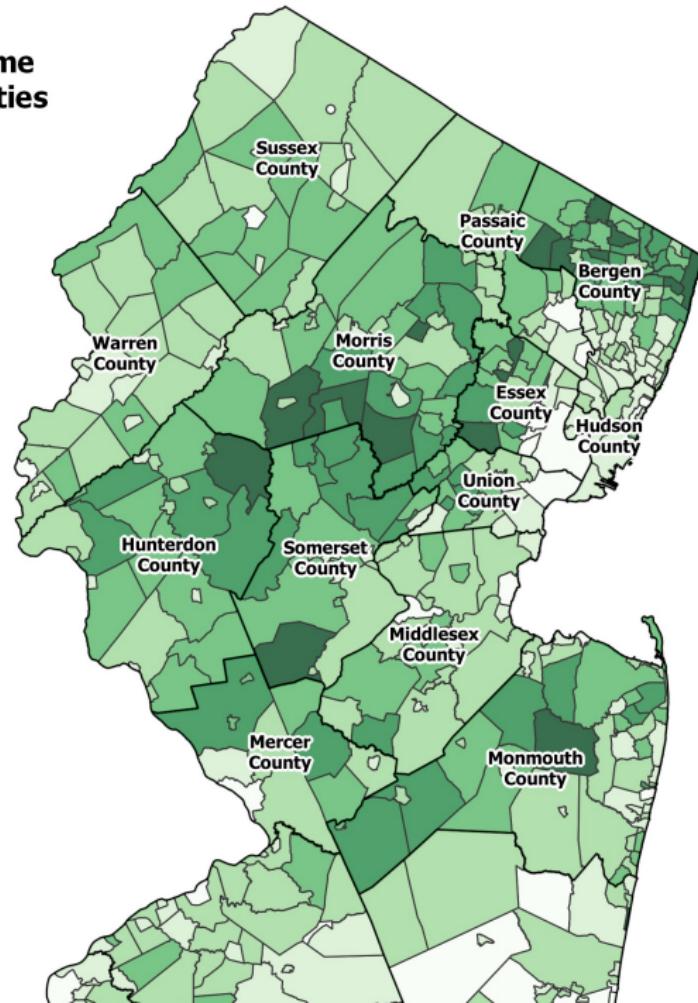
## Median Household Income in New Jersey Municipalities

For 2006-2010  
Median Income: \$67,681

### Legend

#### Median Income Range

- \$25,682 - \$48,702
- \$48,703 - \$69,915
- \$69,916 - \$90,411
- \$90,412 - \$113,542
- \$113,542 - \$144,299
- \$144,300 - \$250,001
- No data available



## income in NJ

- ◊ note, map cut to display detail
- ◊ nice title, we know timeframe
- ◊ legend: note decimal points; love yellow for missing data
- ◊ really nothing to fix; 2 things below \*personal\* preference:
  - use white borders for municipalities—little cleaner
  - use a 2 color ramp (say red-green) to signal poverty-affluence
- ◊ interesting: such big disparities so close to each other
- ◊ a note on level of analysis:
  - if county level data: N dark green; S: bright green
  - it would cover up deep poverty pockets in NYC metro!
- ◊ aggregation does matter! results are totally different

## ok, let's browse some online maps

- ◊ google “thematic map”
- ◊ or “choropleth maps”

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