

pretty (and smart)

adam okulicz-kozaryn

adam.okulicz.kozaryn@gmail.com

this version: Friday 7th October, 2016 14:31

outline

looks matter

general: displaying data in any graph (incl a map)

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

outline

looks matter

general: displaying data in any graph (incl a map)

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

let's load our favorite counties data

- ◊ http://people.hmdc.harvard.edu/~akozaryn/myweb/bounds_nj_shp.zip
- ◊ and let's look more at the style tab
- ◊ see colors, transparencies, symbols, etc

exporting to word

- ◊ just export from print composer as jpeg [show](#)
- ◊ and then insert into word
- ◊ pretty decent quality
- ◊ probably best just increase resolution to say 600dpi on jpeg
(default is 300dpi): on the right Items-Composition-Export Resolution
[http://gis.stackexchange.com/questions/3718/
how-to-control-image-output-settings-in-qgis](http://gis.stackexchange.com/questions/3718/how-to-control-image-output-settings-in-qgis)
- ◊ can try tiff (they can get really large in size!)

<http://gis.stackexchange.com/questions/9784/>

[http://gis.stackexchange.com/questions/9784/
how-do-i-get-the-best-print-quality-from-qgis-and-is-arc-better](http://gis.stackexchange.com/questions/9784/how-do-i-get-the-best-print-quality-from-qgis-and-is-arc-better)

“looks v 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 !

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/)

outline

looks matter

general: displaying data in any graph (incl a map)

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

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
 - and many many maps! dozens, hundreds, the more the better
 - no, i don't want to see dozens of maps
 - you have to, if you want to produce one great map

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)

why use graphs ?

- ◊ graphs are an excellent way to communicate quantitative information
- ◊ people will remember graphs better than just numbers
- ◊ graphs will enliven your argument

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

outline

looks matter

general: displaying data in any graph (incl a map)

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

outline

looks matter

general: displaying data in any graph (incl a map)

but wait, smart is important too! see final_project.pdf

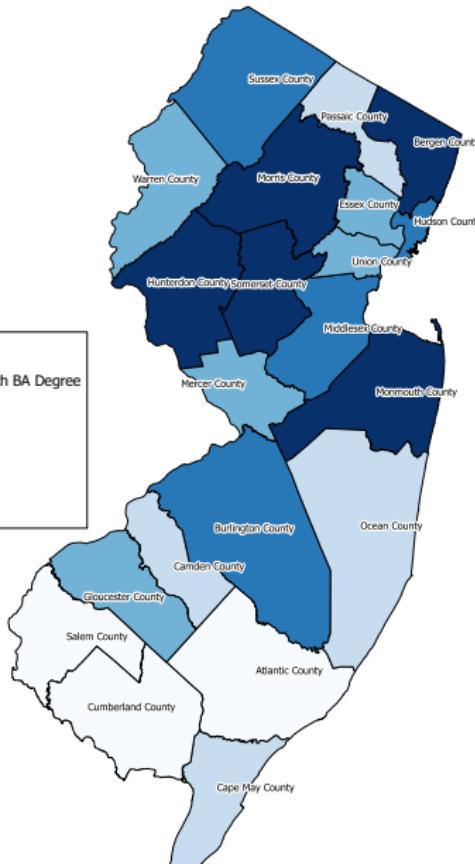
examples from past

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

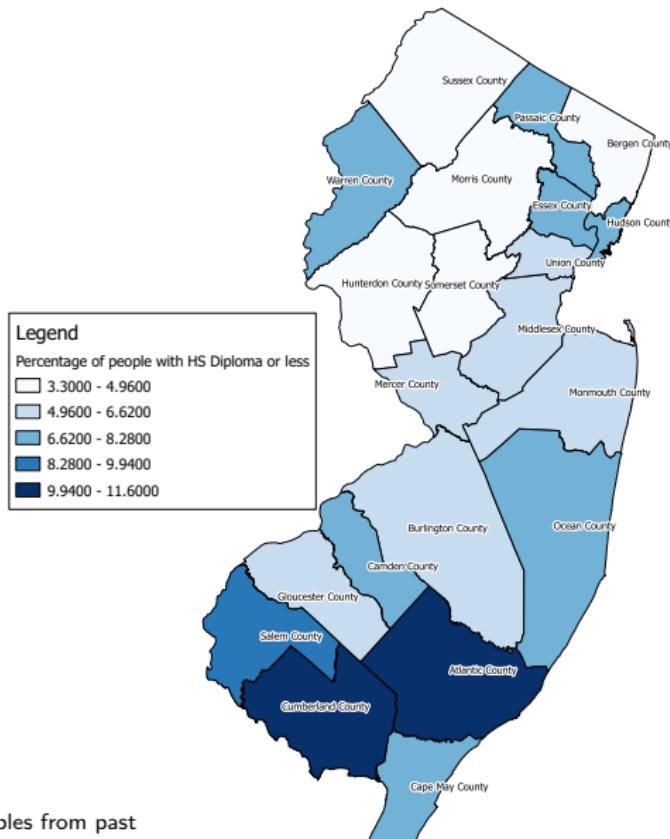
NJ counties

- ◊ 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



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

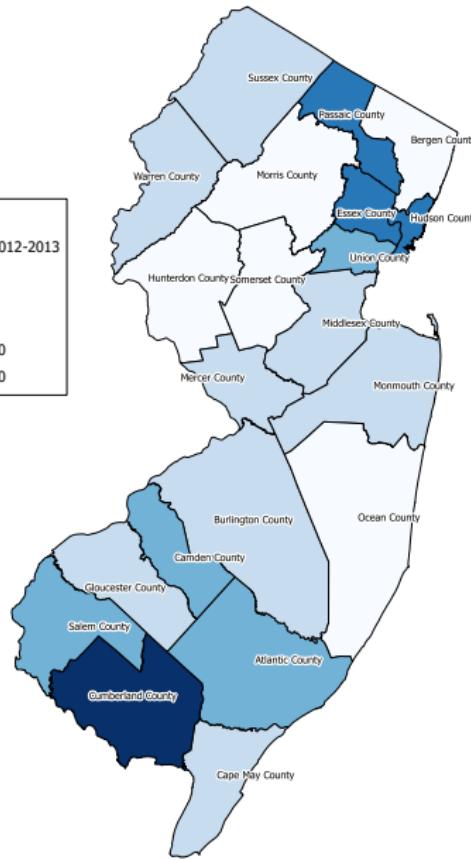


2012-2013 NJ K-12 Education Aid per resident

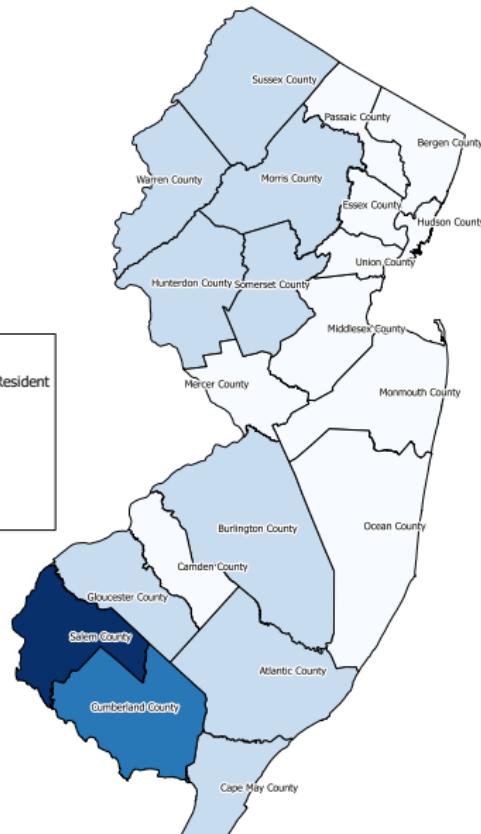
Legend

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

if time, let's browse some online maps

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

what is a pretty map?

- ◊ for comments on maps slides, eg https://sites.google.com/site/adamokuliczkozaryn/gis_int/adv_q1.pdf?attredirects=0

https://sites.google.com/site/adamokuliczkozaryn/gis_int/qis_end.pdf?attredirects=0

note: some of these maps are ugly!

- ◊ pretty maps:

<http://gis.stackexchange.com/questions/3083/what-makes-a-map-beautiful>

<http://grindgis.com/blog/9-beautiful-maps-that-you-would-like-to-see>

<http://gisgeography.com/most-beautiful-weather-maps/>

- ◊ ugly maps: <http://gis.stackexchange.com/questions/3087/what-makes-a-map-be-classed-as-badly-designed>

- this one looks like vomit

<http://i.stack.imgur.com/3hBTV.jpg>

what is a pretty map?

- ◊ NYT has top notch maps, eg

<http://www.nytimes.com/newsgraphics/2014/01/05/poverty-map/?ref=multimedia>

<http://www.nytimes.com/2016/09/13/upshot/>

the-most-detailed-map-of-gay-marriage-in-america.html <https://www.wired.com/2013/08/how-segregated-is-your-city-this-eye-opening-map-shows-you/>

- ◊ <https://flowingdata.com/> has great examples

- ◊ and see my maps! <http://link.springer.com/article/10.1007/s11205-010-9671-y>

<https://rucore.libraries.rutgers.edu/rutgers-lib/48286/>

<https://rucore.libraries.rutgers.edu/rutgers-lib/48286/>

outline

looks matter

general: displaying data in any graph (incl a map)

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