

Report1

(1) Introduction

- map of tunisia
- star wars
- hannibal
- colesium
- lack of usage of alternative data in the developing world

(2) Description of data

- Linkage data was collected from INS website
- INS website is very slow
- Planet didn't provide large enough coverage eg. at the country level
- Many sources for satellite imagery

(3) Analysis of data quality

Some of the variable names are unclear, probably due to shoddy translation (i.e. what is the diff between 'Number of households having drinking water from the public source or source of water association' and 'Number of households having drinking water from the other public or private source'? - translation - stata

(4) Main analysis (Exploratory Data Analysis)

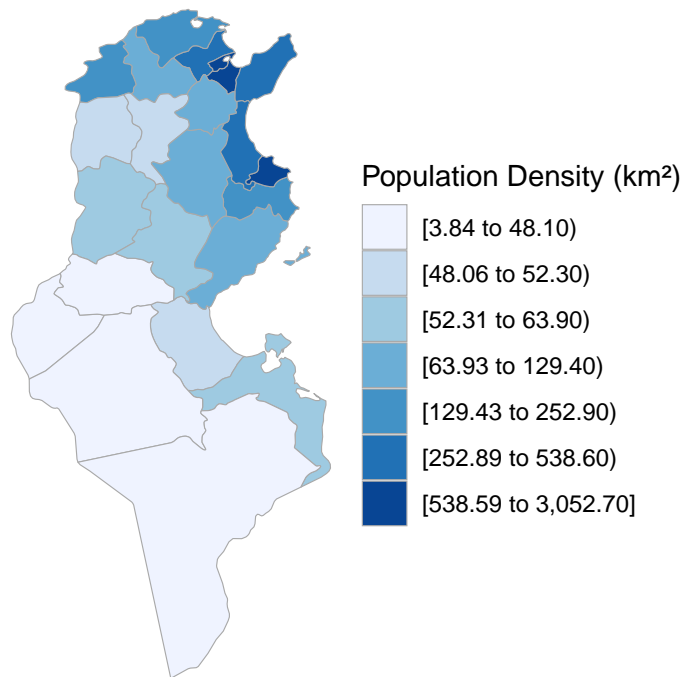
Extensive data processing

(4.a) A First Look at Tunisia

TODO: - suppress the warning messages (add appropriate notation inside `{r ...}`) - remove Ariana from original data

Tunisia's Population Density by Governorate

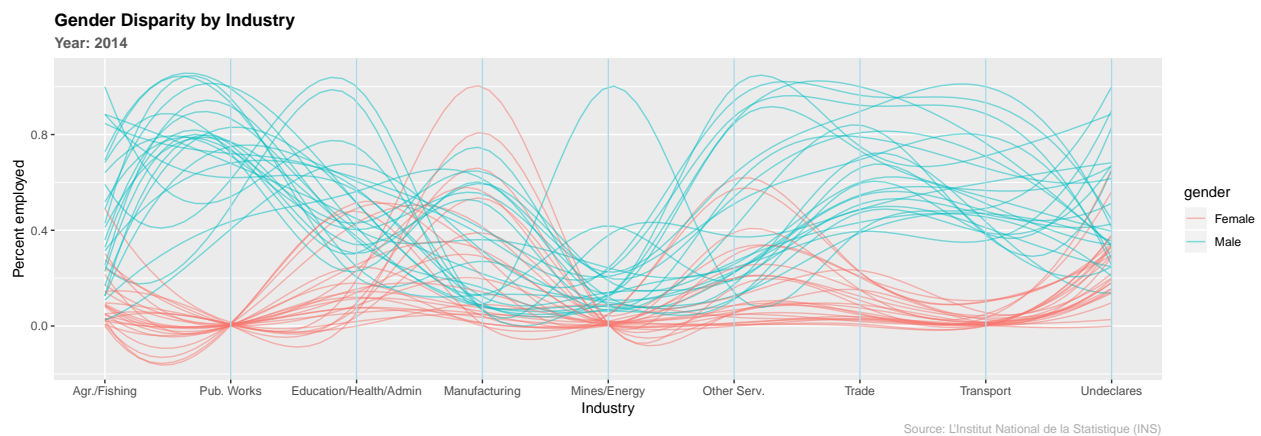
Year: 2014



Source: L'Institut National de la Statistique (INS)

Comments: - coastal - point out tunis - Note: (1/24) Gov Ariana not included in the ChoroplethrAdmin 1 library

(4.b) Population breakdown by Industry and Gender



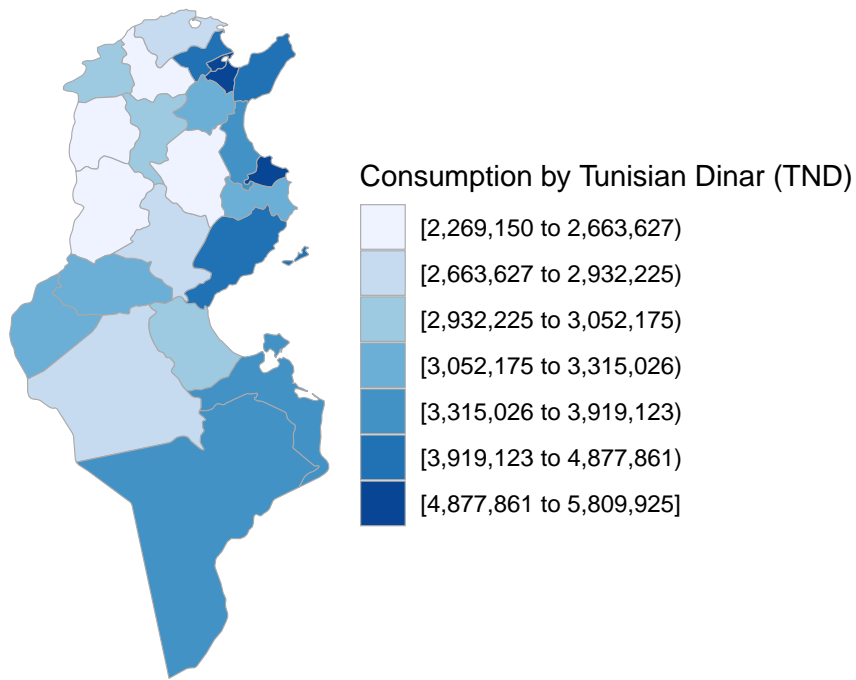
Comments: - interesting peak for mines/energy and manufacturing

(4.c) Consumption by Governorates

TODO: - add after map bar plot or cleveland dot plot to show ranking of governorates by consumption

Consumption by Governorate

Year: 2015



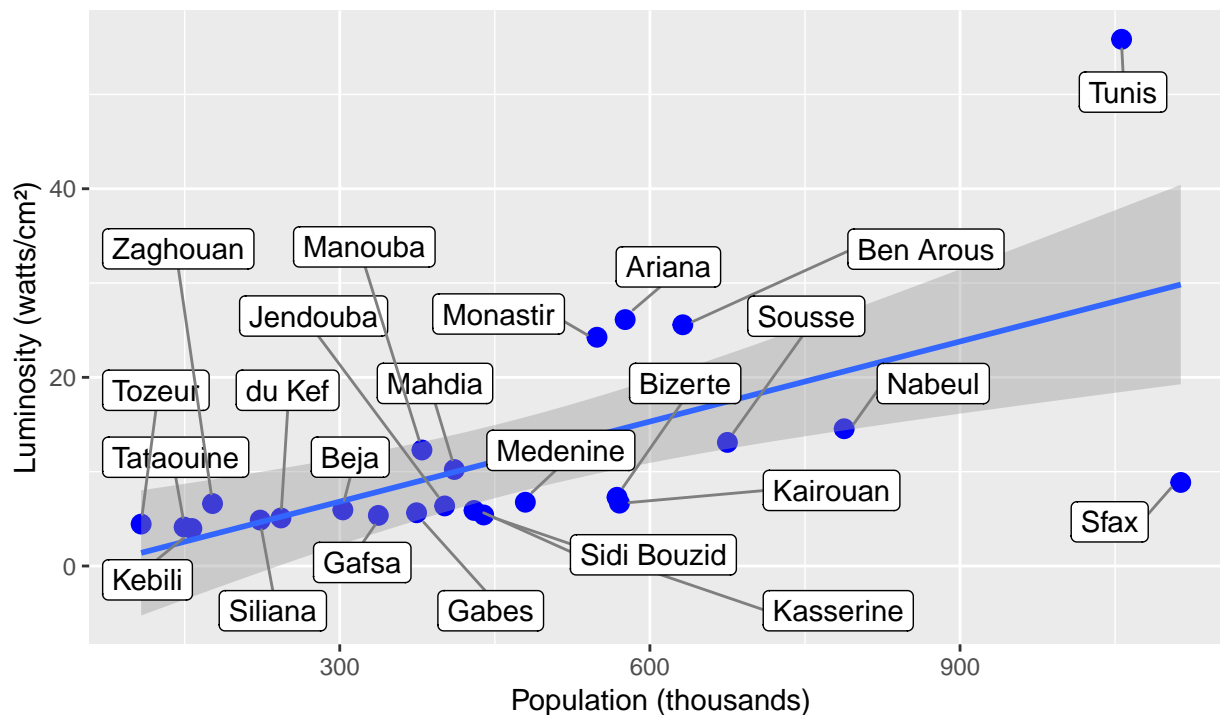
Source: L'Institut National de la Statistique (INS)

Comments: - define consumption - can include exact categories that made up total - per capital - first comma from the right is designating cents - show top 5 - focus on sfax

(4.d) Luminosity trends across Tunisia

Luminosity Vs population by Governorates

Year: 2014

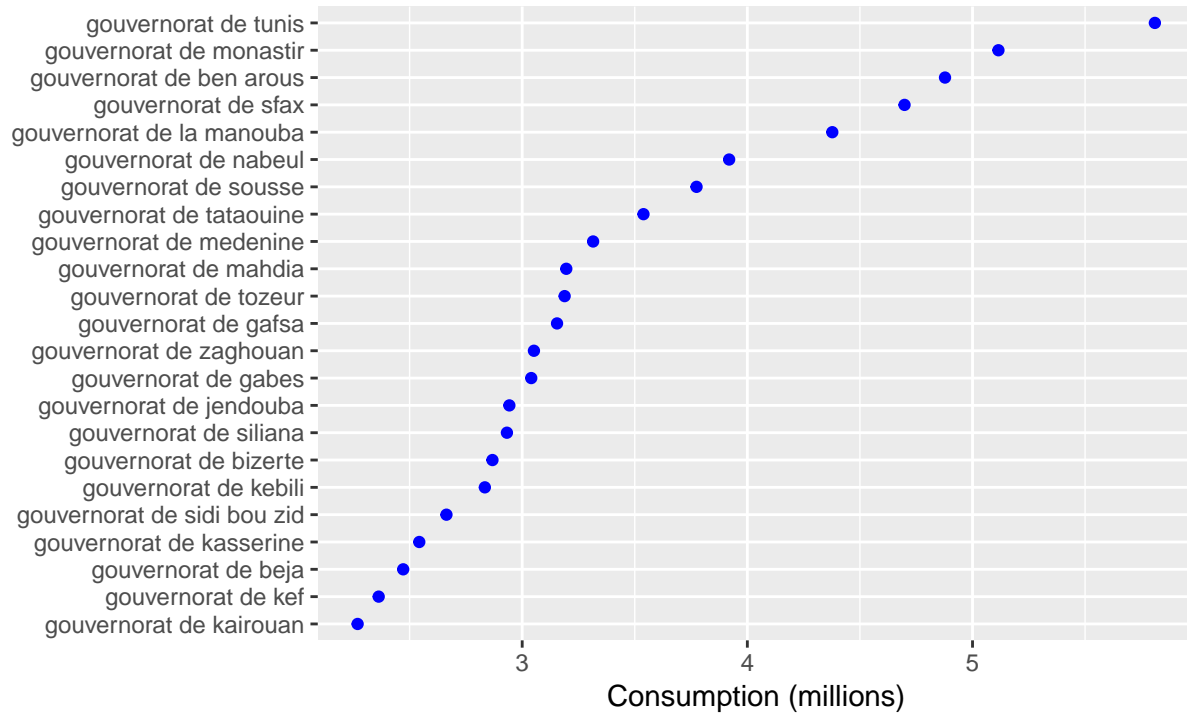


Source: National Oceanic and Atmospheric Administration (NOAA)

Comments: - sfax outlier - general comment: eg. as population goes up luminsity goes up - “transition comment”: Looking at consumption in descending order

Consumption by Governorate

Year: 2015

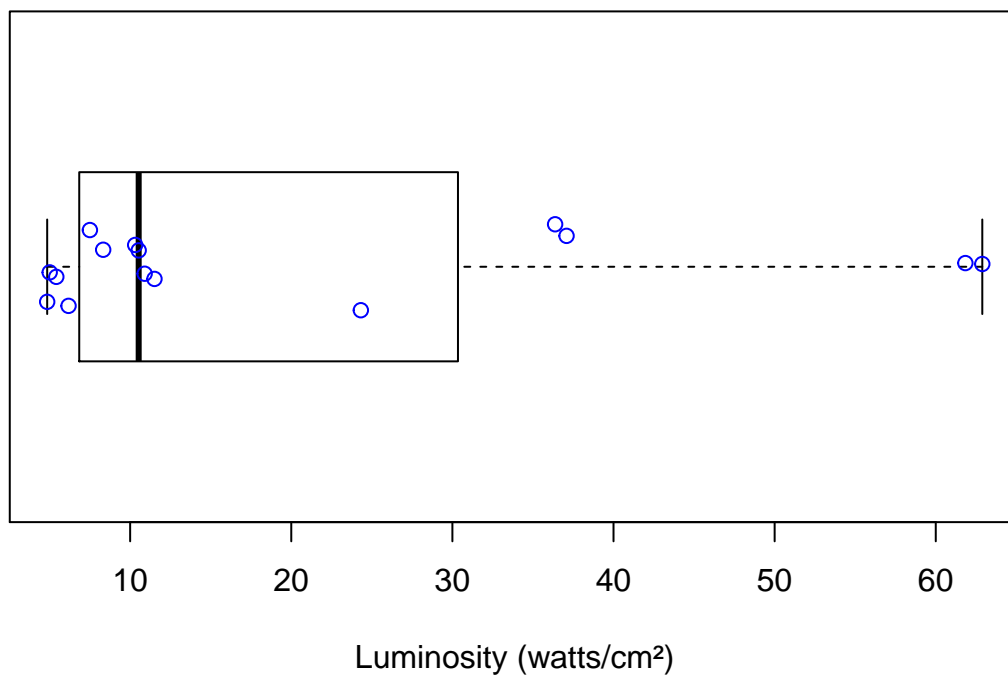


Source: L'Institut National de la Statistique (INS)

Comments: - note sfax is part of top 5 but is a clear outlier in the lowest plot

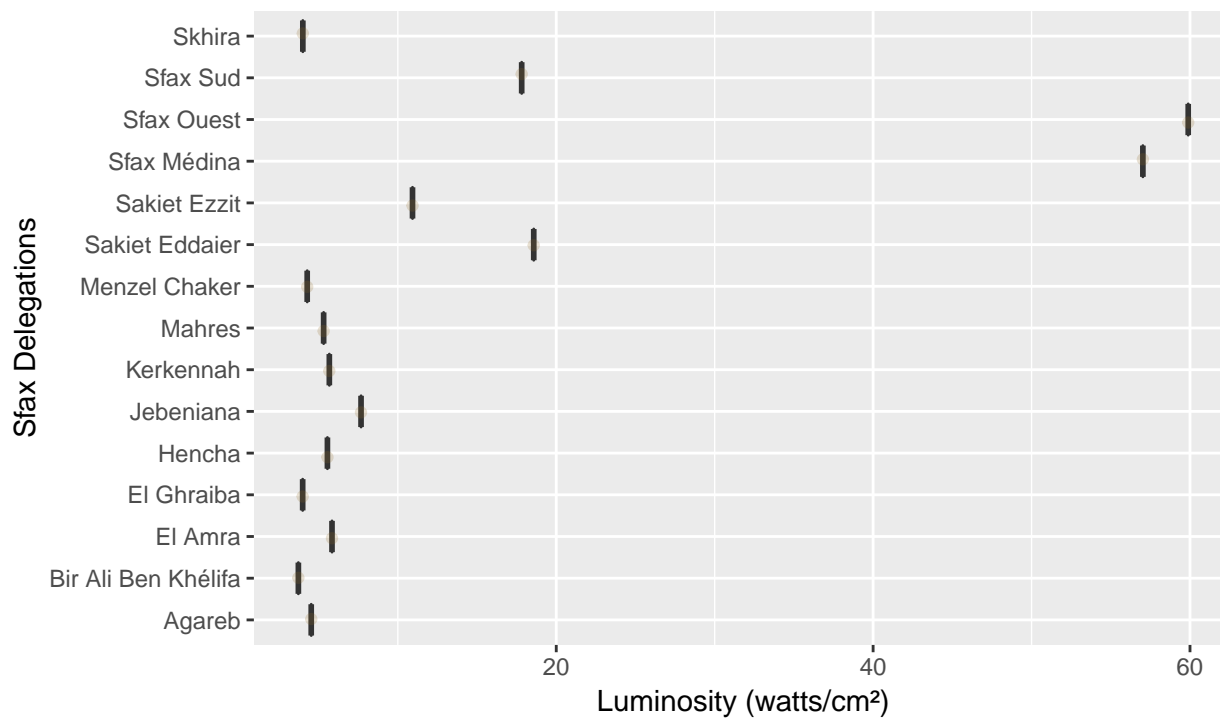
(4.e) A closer at outliers: Sfax

Luminosity of Sfax Delegations (Year: 2013)



Which are the leading delegations within Sfax?

A closer look at luminosity by delegations within Sfax

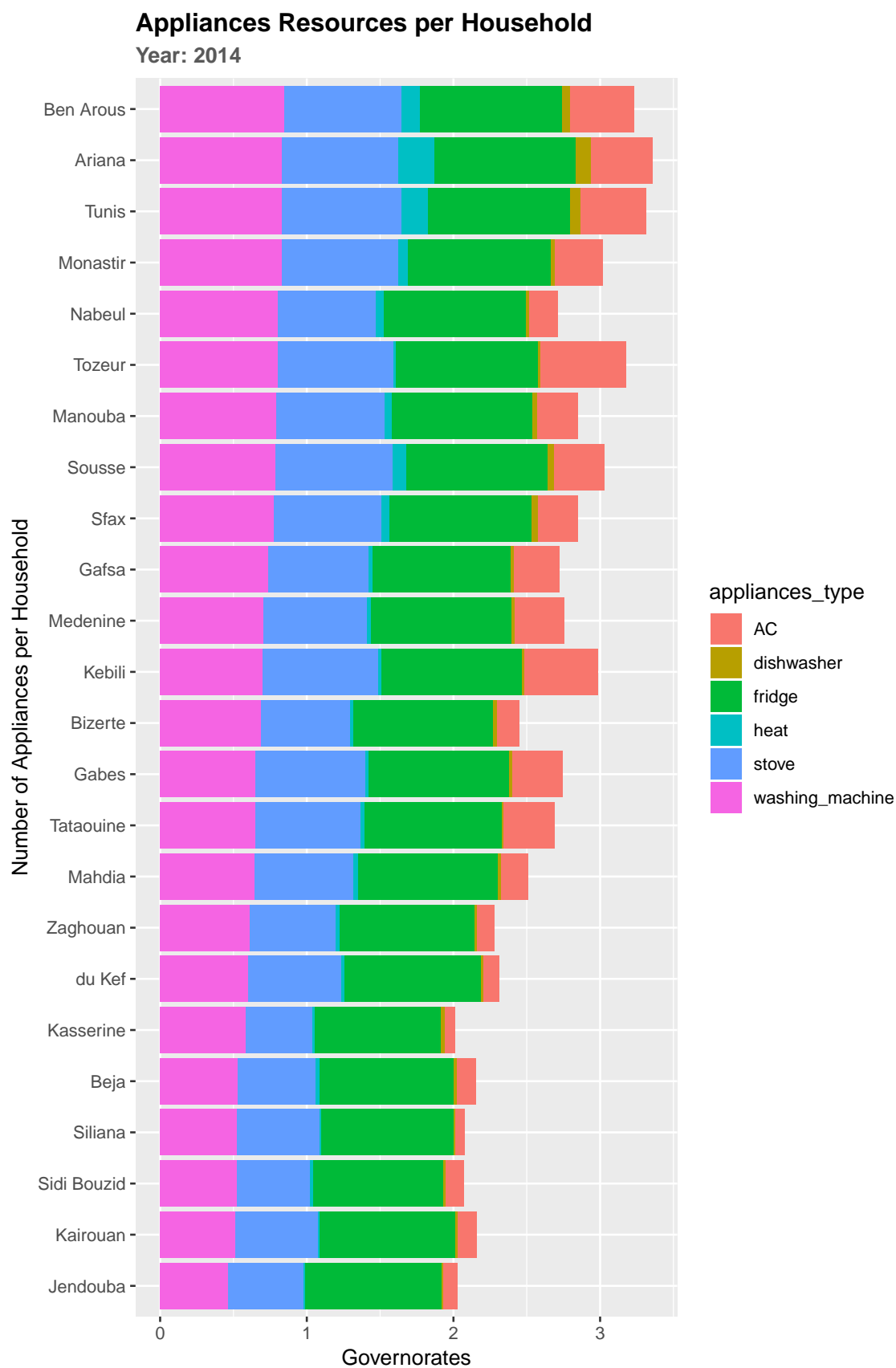


Source: National Oceanic and Atmospheric Administration (NOAA)

Comments: - Clear unbalance between delegations within the Sfax governorates. The outliers are: xxx and YYY.

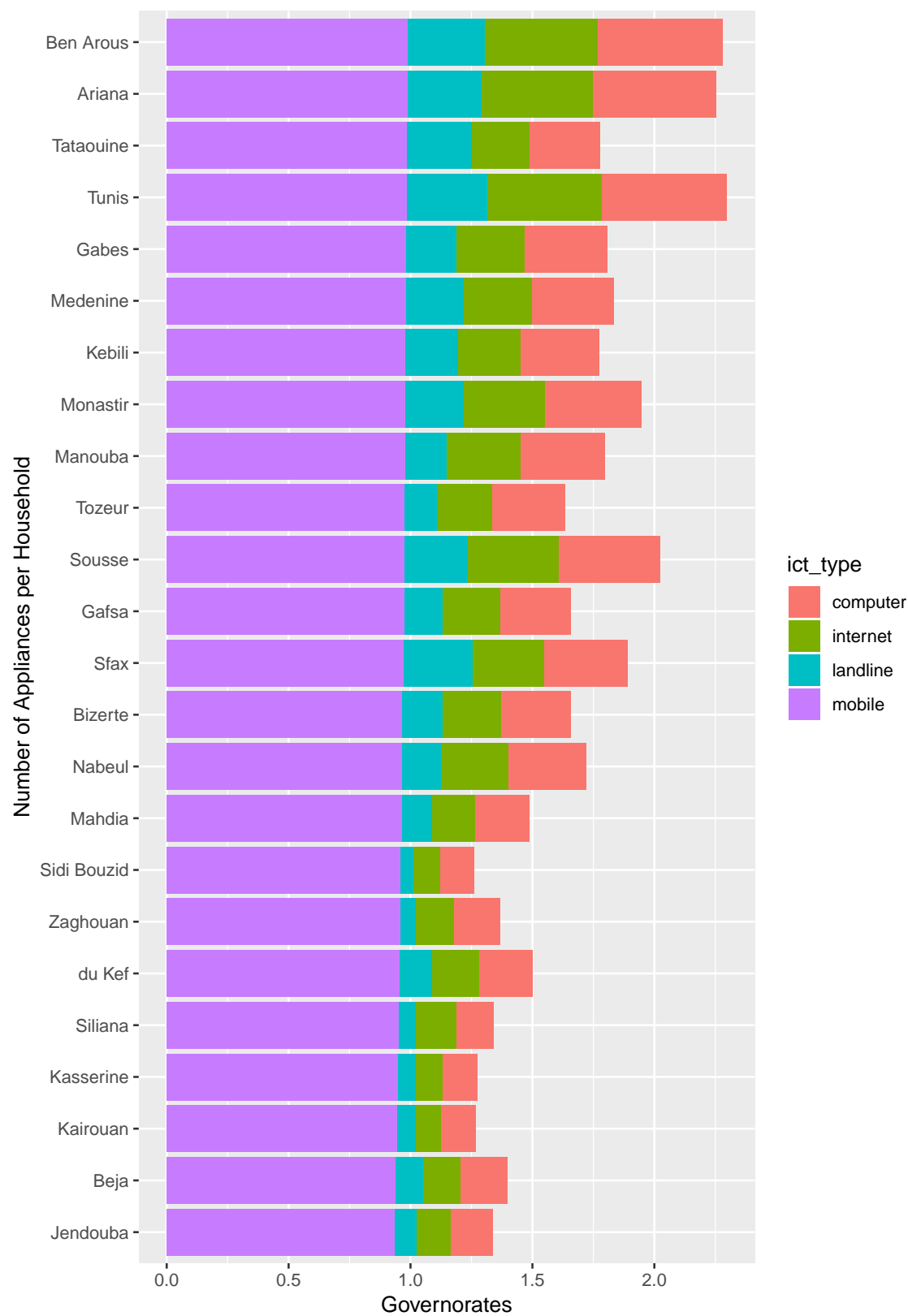
What might explain such variation in luminosity? - a little more

(4.f) Exploring potential covariates of luminosity



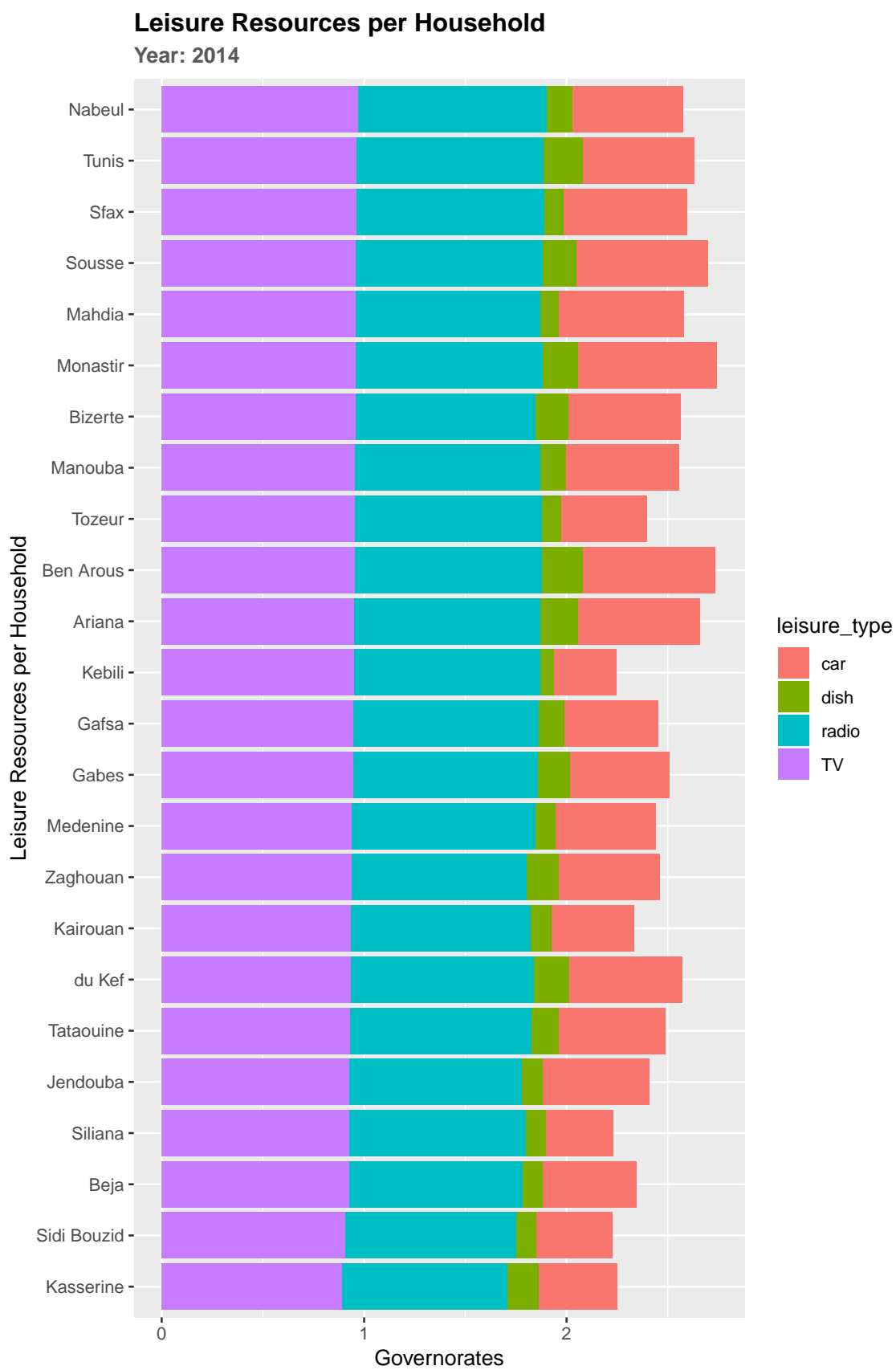
Source: L'Institut National de la Statistique (INS)

Information and Communications Technology (ICT) Resources per Household Year: 2014



Source: L'Institut National de la Statistique (INS)

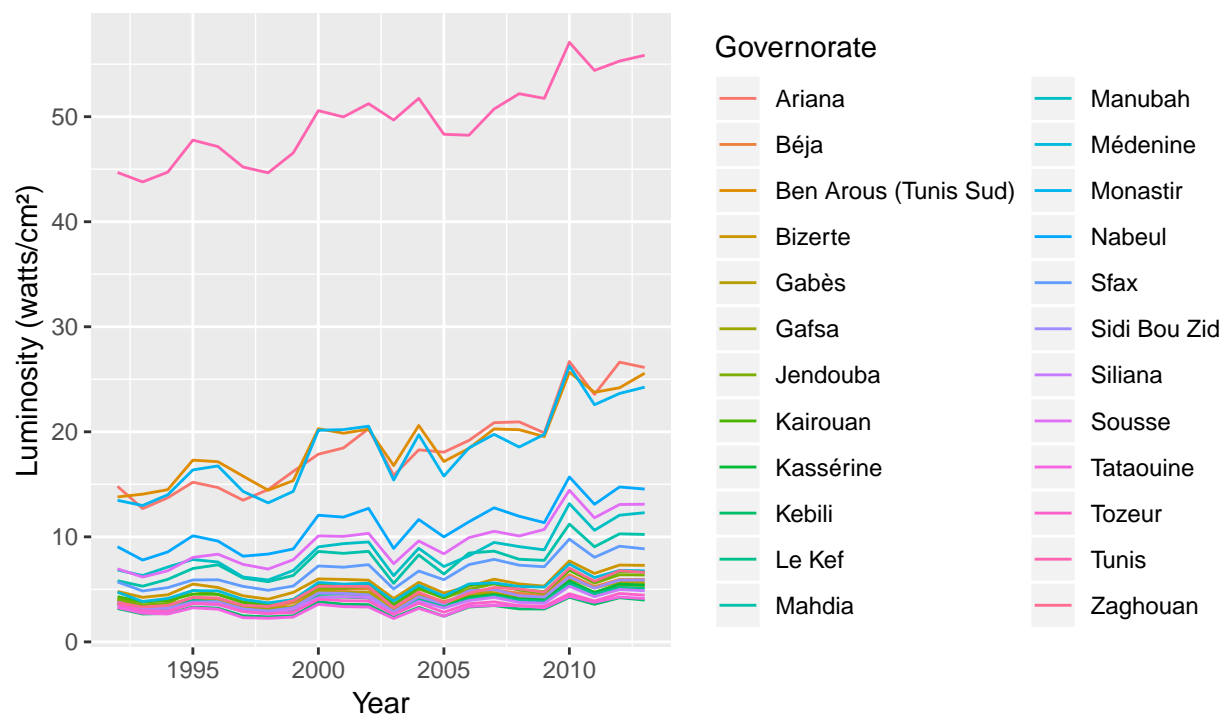
Leisure Resources



Source: L'Institut National de la Statistique (INS)

Luminosity by Governorate by Year

1992 – 2013



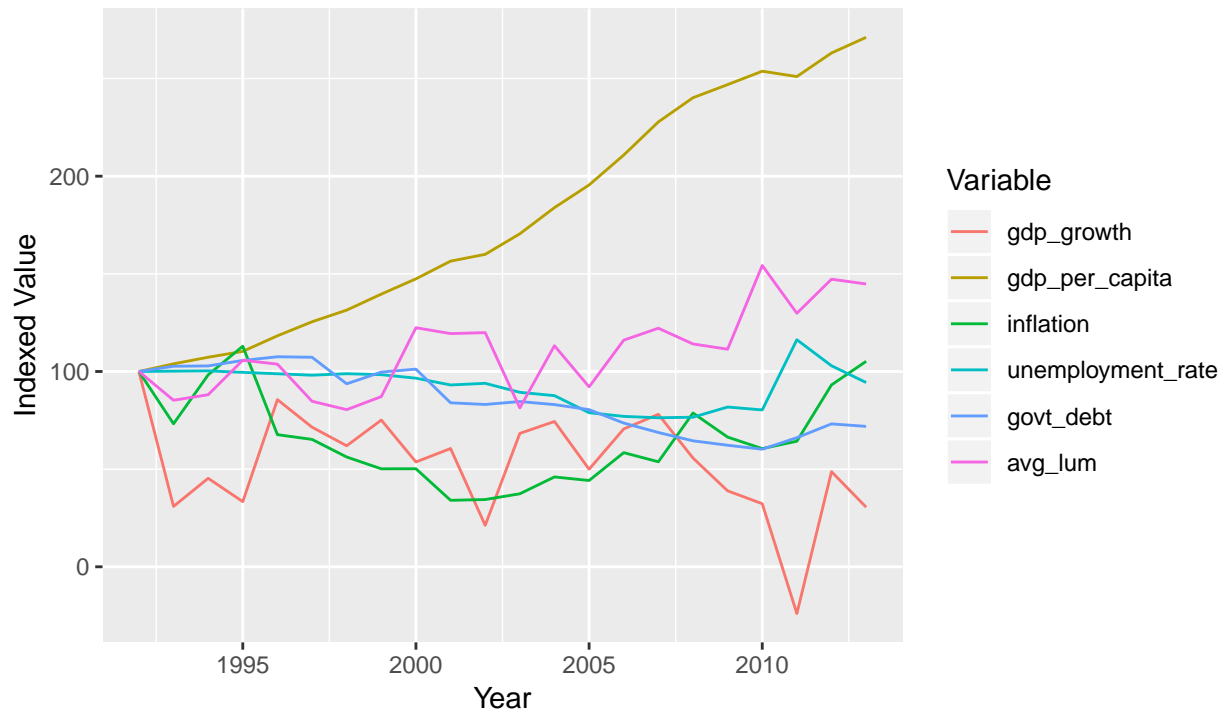
Source: L'Institut National de la Statistique (INS)

Comments: - tunis obviously - and the middle ones - why near one another

For a frame of reference, see appendix with graph of high, medium and low luminosities

Indexed Economic Indicators for Tunisia

1992 – 2013



Source: L'Institut National de la Statistique (INS)

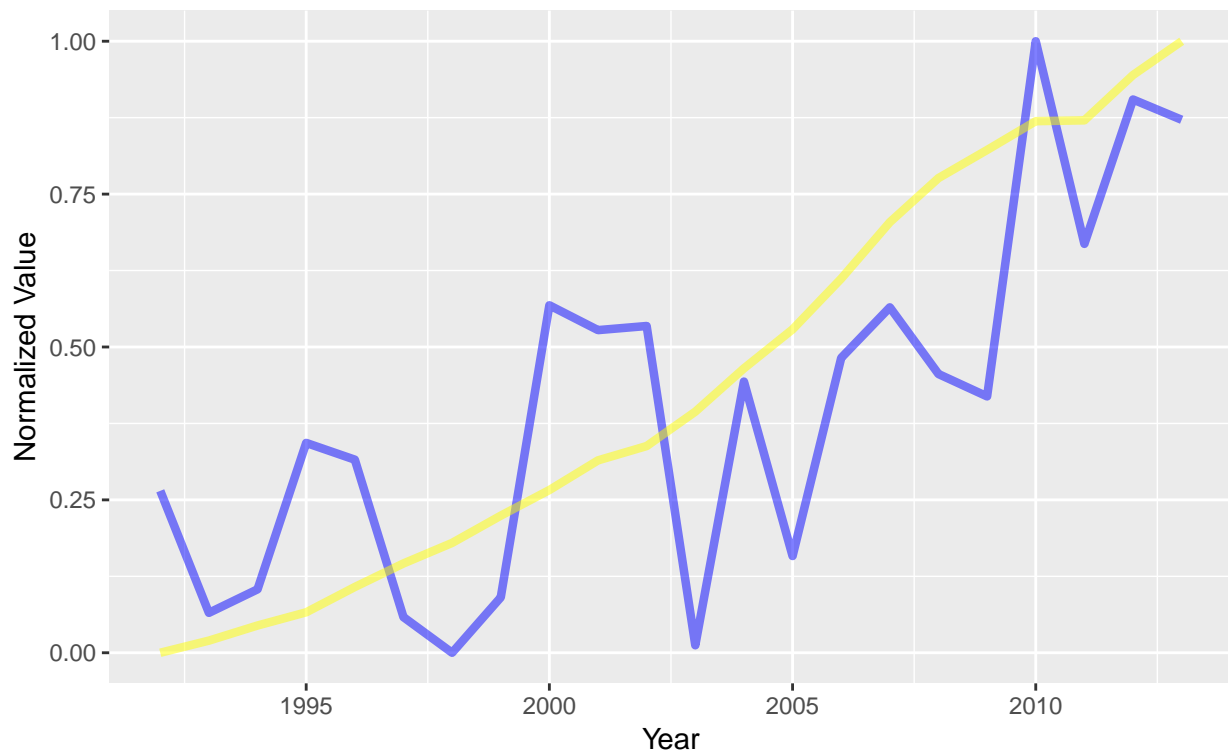
Comments: - maybe push this to conclusion - maybe rename variables - more from Namson

Warning in cor(tunisia): the standard deviation is zero

```
##
##      year count      sum gdp_growth      gdp_ppp
## year      1.0000000 NA  0.7329709 -0.4007986  0.989903076
## count      NA      1      NA      NA      NA
## sum      0.7329709 NA  1.0000000 -0.3818728  0.751756723
## gdp_growth -0.4007986 NA -0.3818728  1.0000000 -0.397664279
## gdp_ppp     0.9899031 NA  0.7517567 -0.3976643  1.000000000
## gdp_per_capita 0.9895421 NA  0.7433196 -0.3841289  0.999346158
## inflation    -0.1098110 NA  0.1436795 -0.1029147 -0.008166219
## unemployment_rate -0.3512514 NA -0.1185138 -0.3242774 -0.355587641
## govt_debt    -0.9141032 NA -0.6580060  0.3674089 -0.927997907
## avg_lum      0.7329709 NA  1.0000000 -0.3818728  0.751756723
##
##      gdp_per_capita inflation unemployment_rate govt_debt
## year      0.98954214 -0.109810976      -0.3512514 -0.9141032
## count      NA      NA      NA      NA
## sum      0.74331962  0.143679478      -0.1185138 -0.6580060
## gdp_growth -0.38412887 -0.102914738      -0.3242774  0.3674089
## gdp_ppp     0.99934616 -0.008166219      -0.3555876 -0.9279979
## gdp_per_capita 1.00000000 -0.027981867      -0.3835113 -0.9366557
## inflation    -0.02798187  1.000000000      0.3097474  0.1539523
## unemployment_rate -0.38351131  0.309747374      1.0000000  0.5039443
## govt_debt    -0.93665573  0.153952295      0.5039443  1.0000000
## avg_lum      0.74331962  0.143679478      -0.1185138 -0.6580060
##
##      avg_lum
## year      0.7329709
```

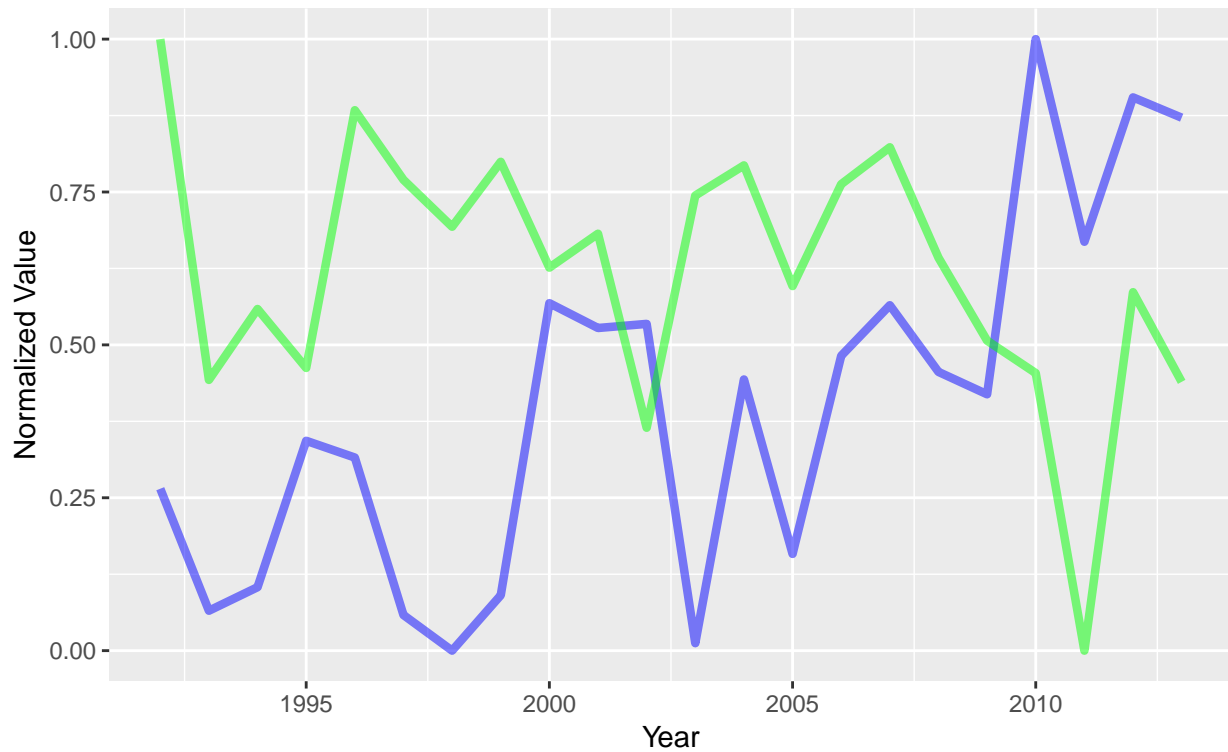
```
## count      NA
## sum        1.0000000
## gdp_growth -0.3818728
## gdp_ppp     0.7517567
## gdp_per_capita 0.7433196
## inflation   0.1436795
## unemployment_rate -0.1185138
## govt_debt   -0.6580060
## avg_lum     1.0000000
```

Luminosity vs. GDP per capita (PPP) in Tunisia (Normalized) 1992 – 2013



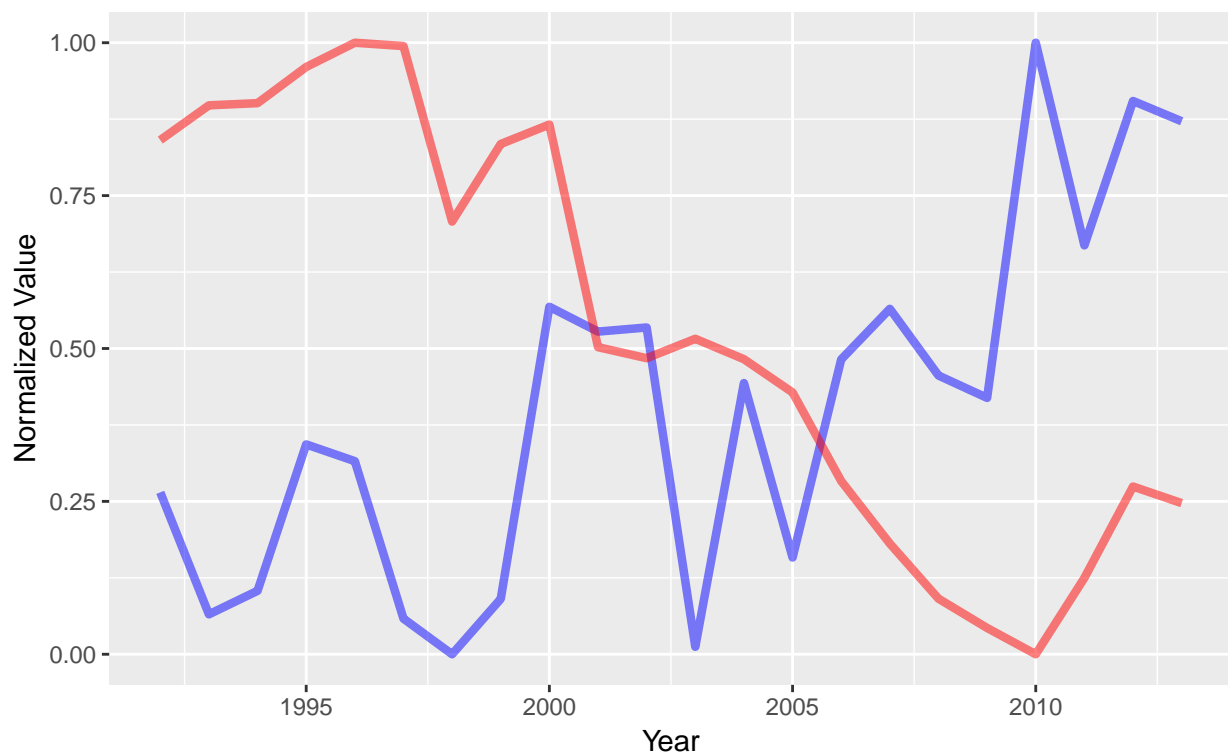
Luminosity vs. GDP Growth in Tunisia (Normalized)

1992 – 2013



Luminosity vs. Government Debt in Tunisia (Normalized)

1992 – 2013



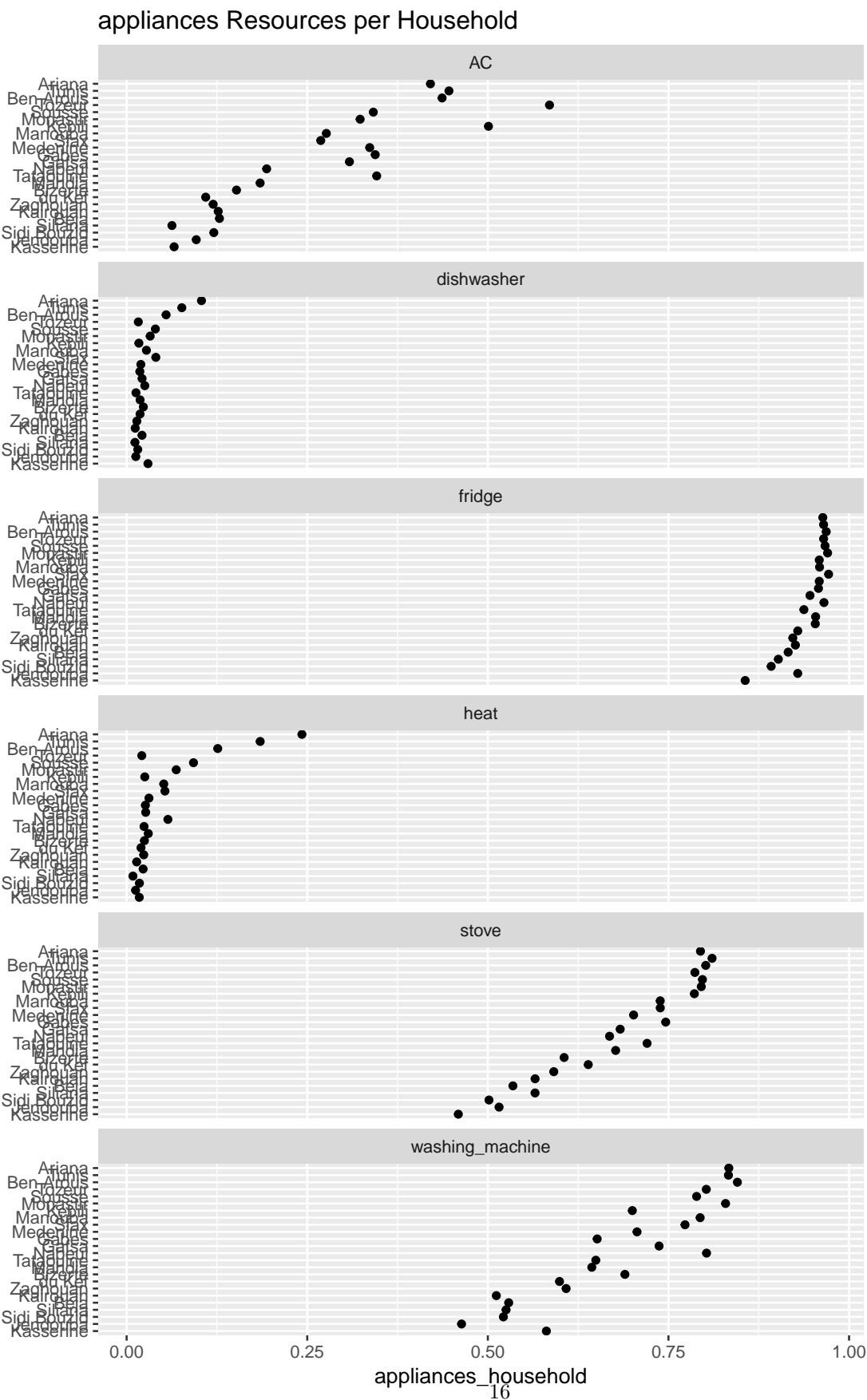
(5) Executive summary (Presentation-style)

(6) Interactive component

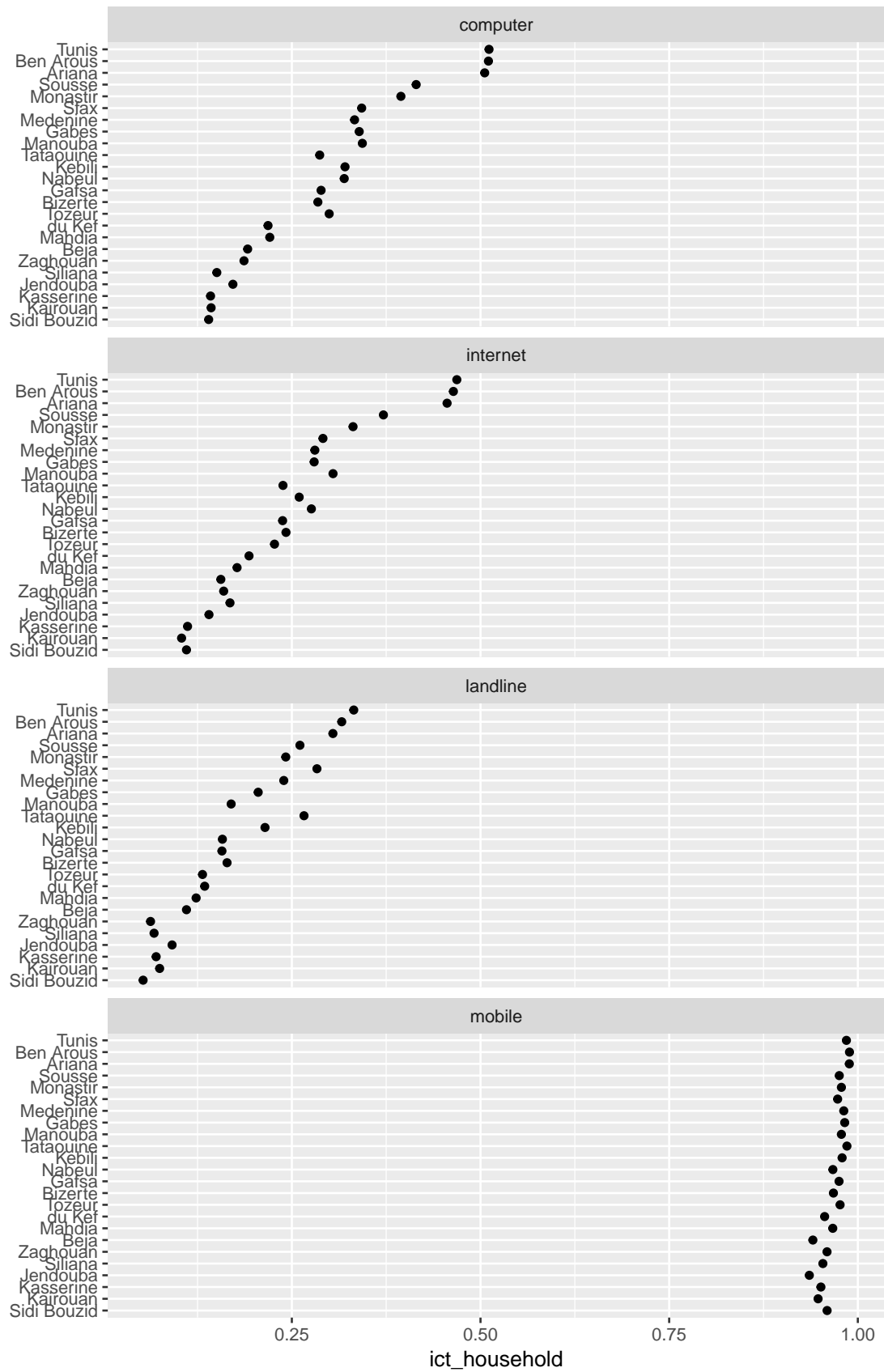
(7) Conclusion

- Interested in looking at 2011 (year of the jasmine revolution) since the GDP went drastically down (Maybe less economic activity? Look into luminosity?)
- Time series of luminosity per governorate
- !! Make a comment about coastal governorates
- https://academic.oup.com/eurpub/article/24/suppl_1/6/560448 - info on Choucha refugee crisis and 20% increase in Medeneine population
- Challenge: choropleth naming for governorates is very specific and does not support french accent". Two regions are missing.
- Bin side - looked into customizing it but very time consuming

Appendix



internet Resources per Household



Leisure Resources per Household

