

# The Digital Opportunity Index as a tool for policy analysis

Michael Minges

Telecommunications Management Group, Inc.



# Topics

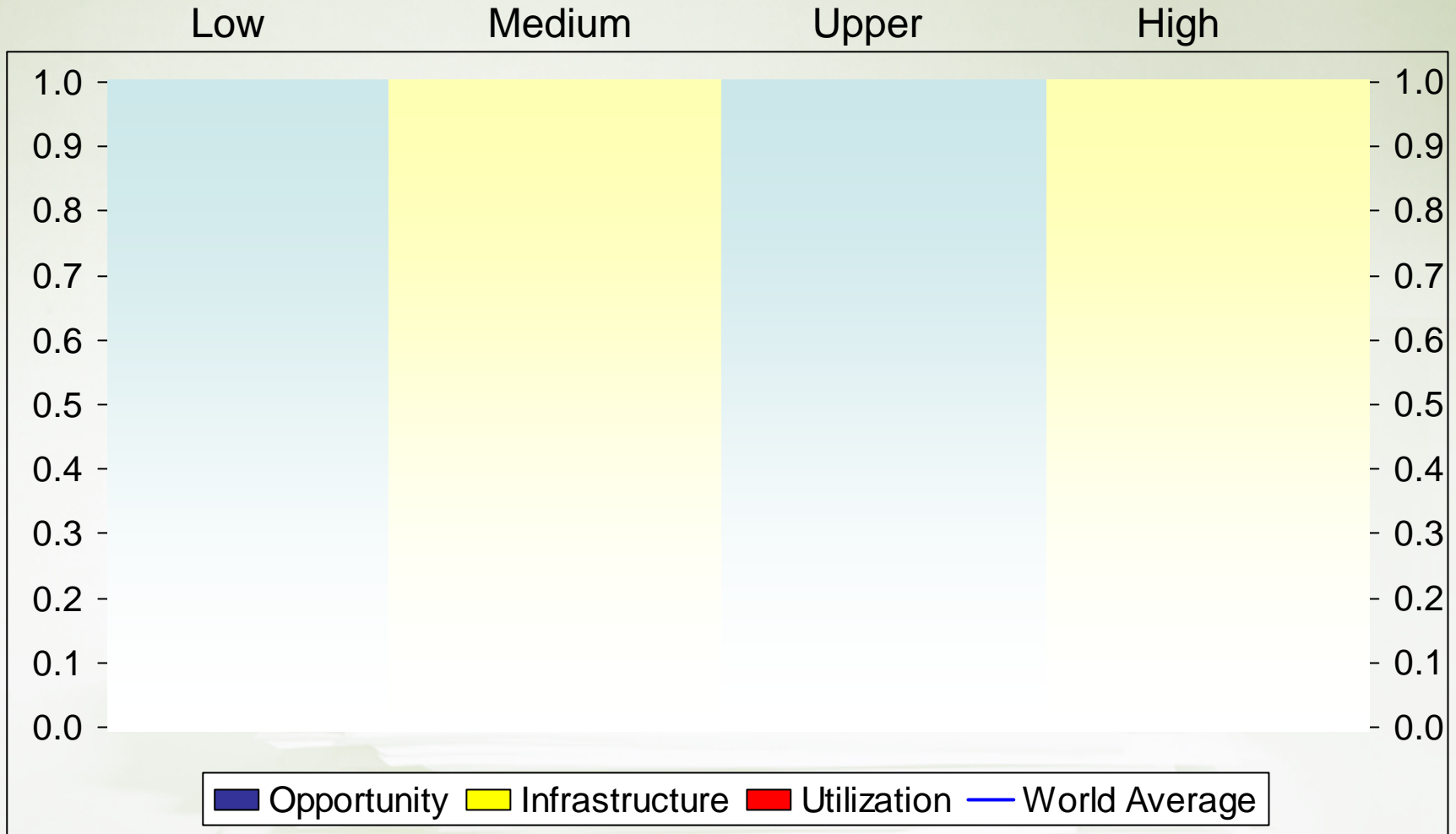
- Benchmarking
- Socio-economic classification
- Extending DOI
- Policy matrix



# DOI Benchmarking

- Useful for top level comparisons of DOI score to get an idea of how a country is performing
- Various benchmarks possible:
  - Global: Comparing score to all countries in world
  - Regional: Comparing score to neighboring countries
  - Economic: Comparing score to countries of similar economic level (e.g., GDP per capita)
  - National: Comparing score within administrative divisions of a country
- Can generally work with international or national *administrative* data

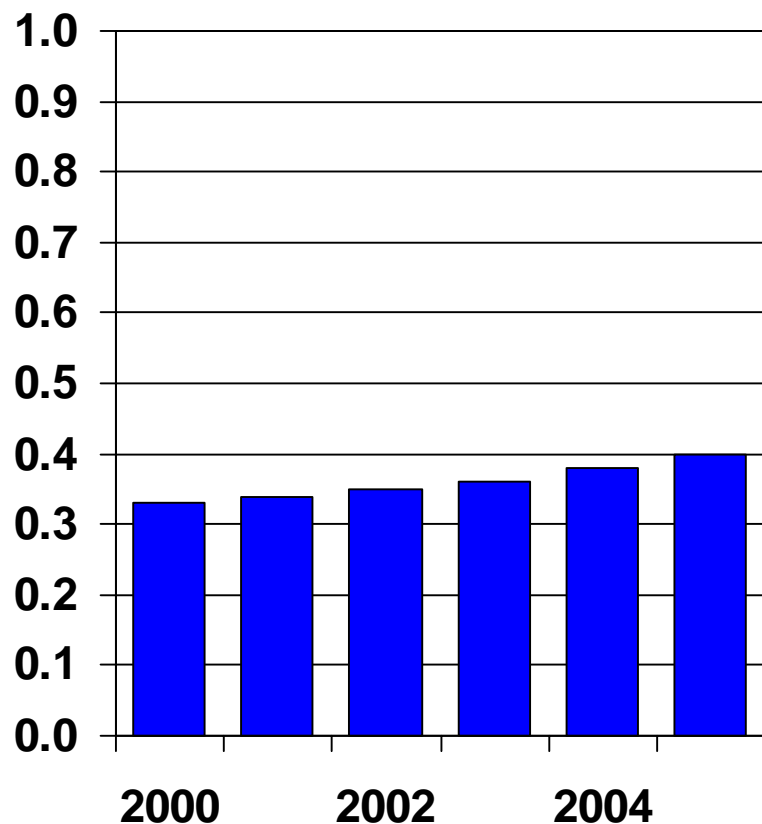
# DOI, 2005



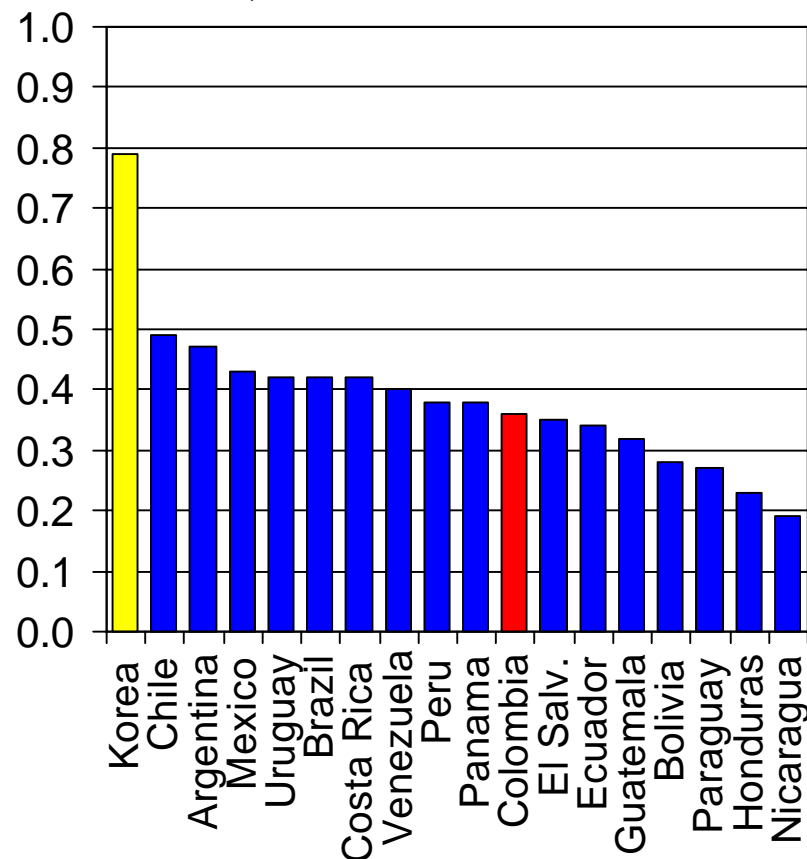
# Colombia & the DOI



## Colombia, DOI



## DOI, 2004



Source: CRT, DANE & estimates (Colombia), ITU (other countries).







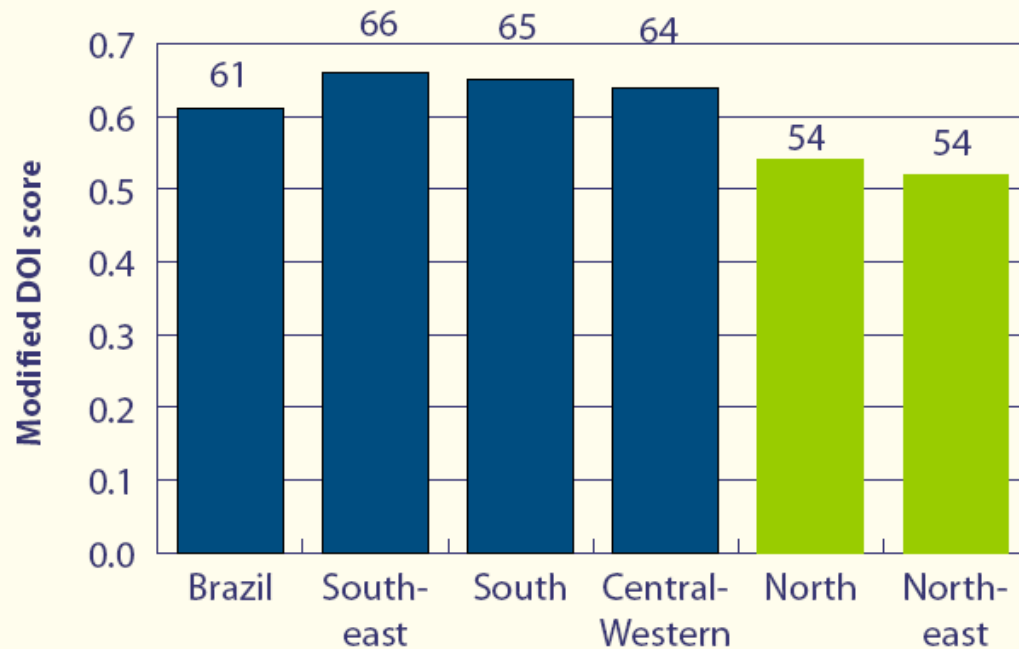
# National DOI

- Instead of peer comparison, DOI of administrative units within a country
- Household ICT data from national statistical agency: Pesquisa Nacional por Amostra de Domicílios, v.25, 2004
- Mobile subscribers by region from telecom web site
- No utilization indicators ☹️



# Brazil: National DOI

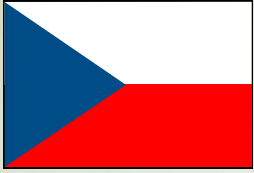
Aggregated scores for modified DOI



# Socio-economic comparison

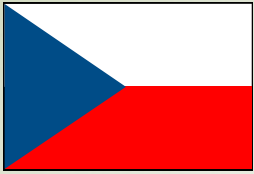
- Critical to understand detail of digital divide
- Who has and does not have access to ICT
- Group by income, ethnicity, gender, location, age, etc.
- Disaggregated *survey* data required
- Some adjustments needed





# Gender disaggregated DOI

- Czech Statistical Office, *Results of ICT Usage Survey in Czech Households and among Individuals 2005*,  
<http://www.czso.cz/eng/edicniplan.nsf/p/9603-05>
- Users by gender, age, education level, employment status, location
- Out of 11 DOI indicators, 8 related gender disaggregated available
- Estimated earned income (PPP US\$) from UNDP, for male & female  
[http://hdr.undp.org/statistics/data/pdf/hdr05\\_table\\_25.pdf](http://hdr.undp.org/statistics/data/pdf/hdr05_table_25.pdf)



# Gender-related DOI

Female

Male

Czech Rep.

Mobile BB				Use
Access to broadband at home	0.24	0.27	0.26	Female: 0.27
Internet use	0.29	0.35	0.32	Male: 0.31
Use mobile phone for WAP	0.02	0.03	0.02	Czech Rep. : 0.29
Access to mobile phone for private use	0.72	0.80	0.76	Infrastructure
Access to Internet at home	0.22	0.25	0.24	Female: 0.35
Access to personal computer at home	0.35	0.39	0.37	Male: 0.37
Fixed line				Czech Rep. : 0.35
Mobile \$	0.98	0.99	0.99	Opportunity
Internet \$	0.98	0.99	0.99	Female: 0.98
Coverage				Male: 0.99
				Czech Rep. : 0.99

**DOI = 0.54**

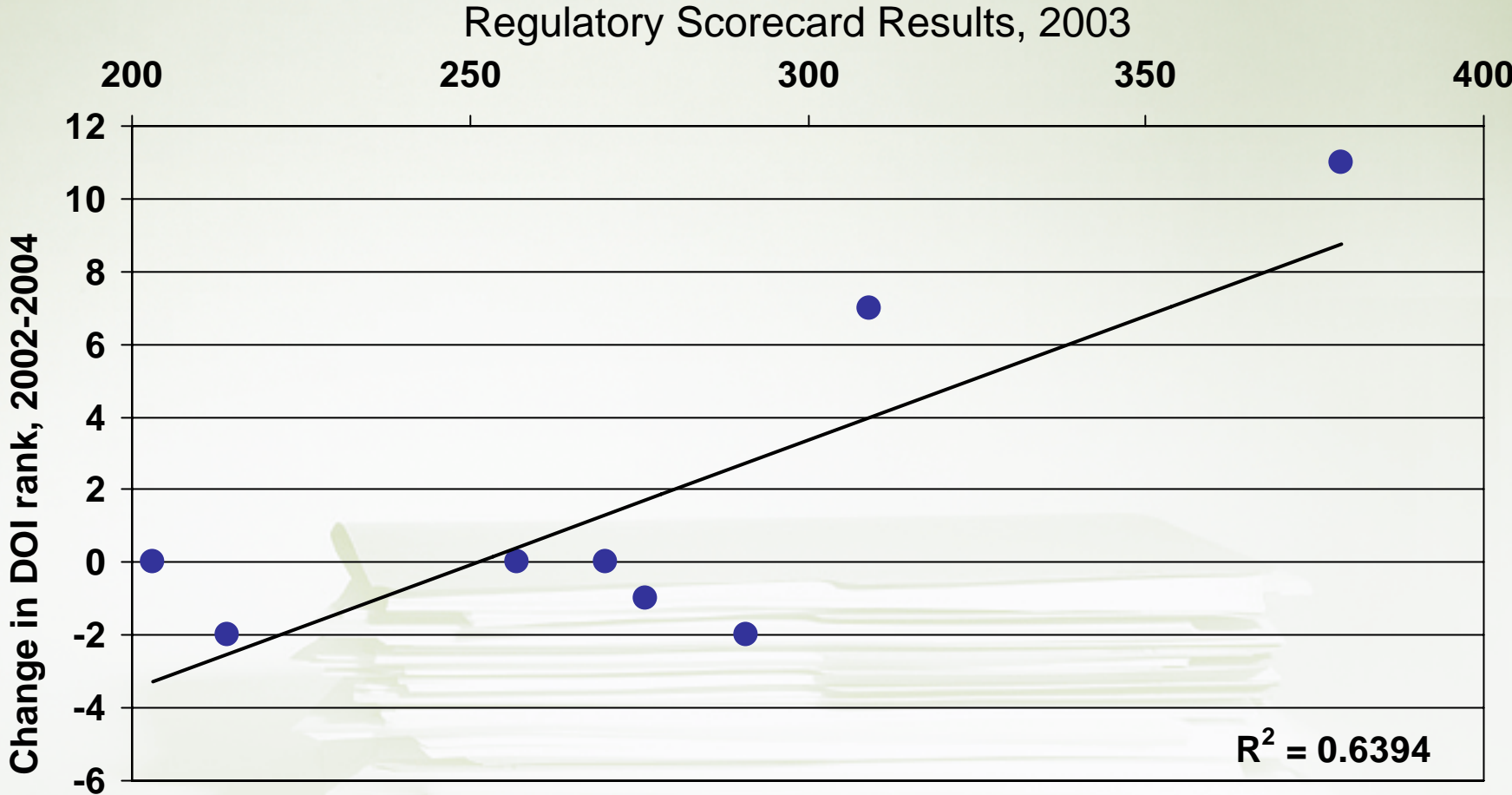
**Gender-related DOI = 0.54**

# Extending DOI

- DOI is an objective measurement of individual & household access to ICT
- Useful to examine relationship between DOI and other factors
- Policy impacts of a country's rank



# DOI & regulation





# Extending DOI

DOI

+

Knowledge  
(e.g., UNDP Education sub index)

+

Regulatory  
(e.g., EU Regulatory Scorecard)

+

E-Business  
(e.g., EC The e-business  
readiness composite indicator)

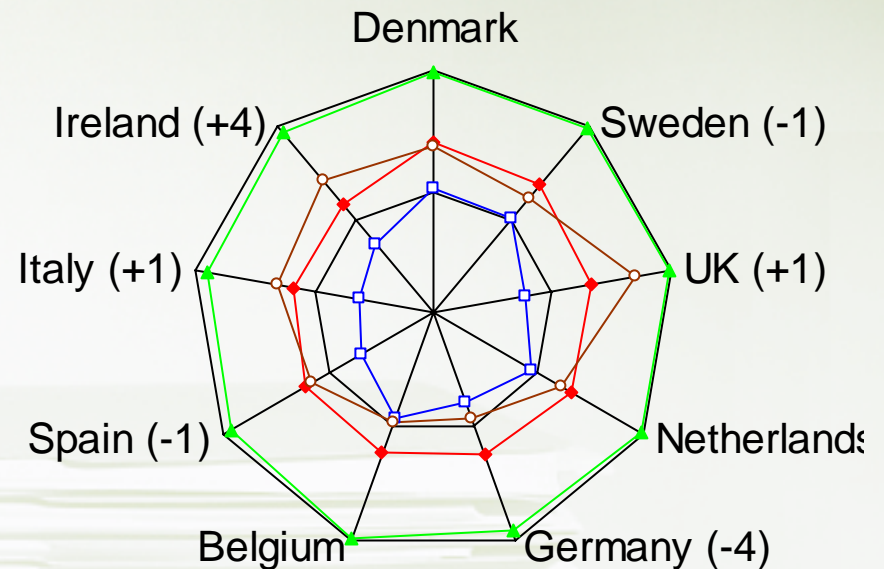
E-Government  
(e.g., UN e-government index)

◆ DOI

□ e-business

▲ Education

○ Regulation





# Policy evaluation

- Micro examination of DOI indices and indicators to design or evaluate policies

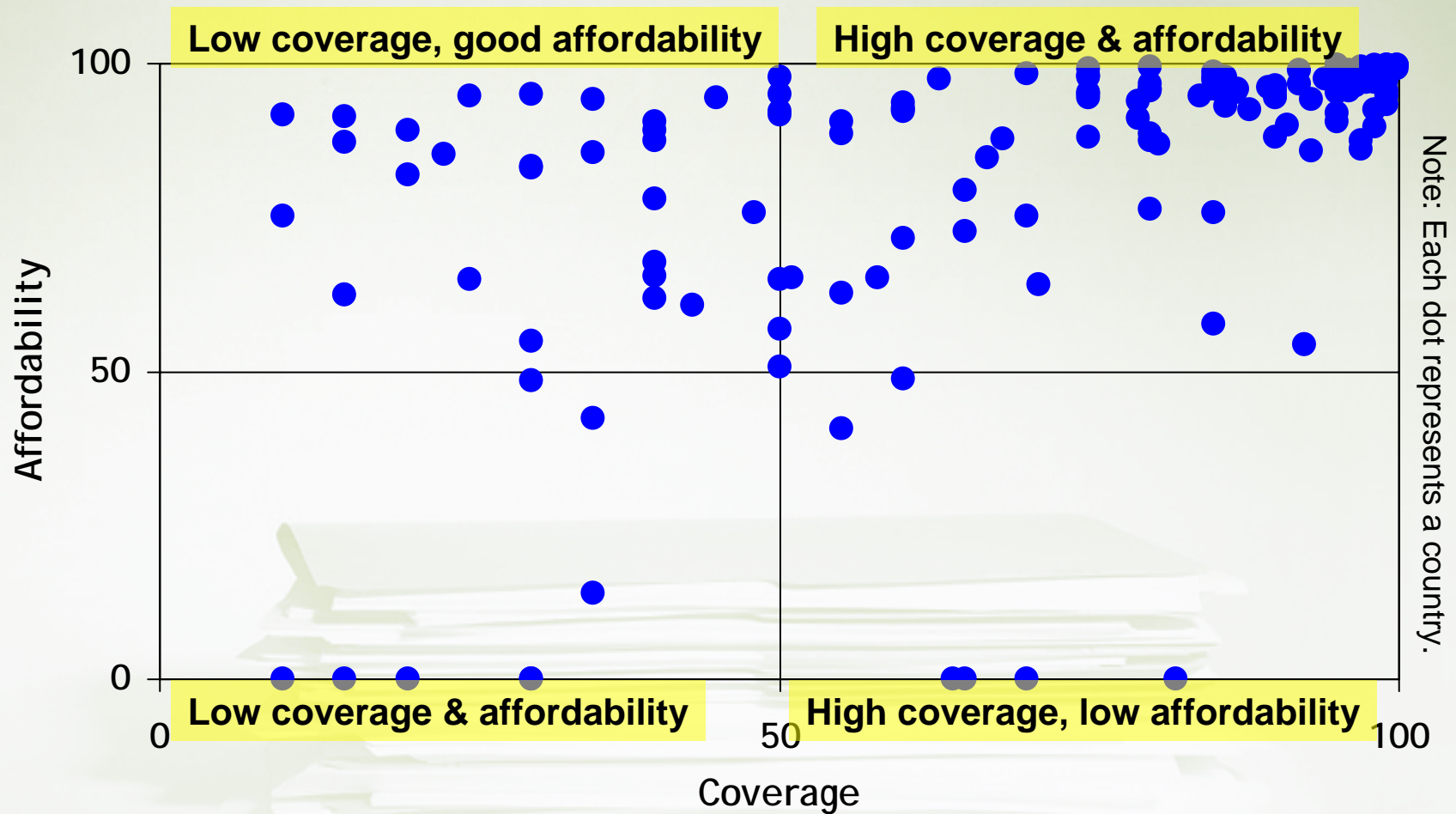


# Policy matrix

<b>DOI Score</b>	<b>Opportunity</b>	<b>Infrastructure</b>	<b>Utilization</b>
<b>High</b>			
<b>Medium</b>			
<b>Low</b>			



# Digital opportunity: Mobile policy matrix



# Conclusions & recommendations

- DOI has rich possibilities for policy analysis
- Limited by availability of either disaggregated DOI data or complementary extension data
- Policy makers and researchers need to lobby government to promote availability of disaggregated data by service providers and national statistical agencies
- Future DOI policy analysis workshop extending the analysis presented here

Thank you

[minges@d-two.info](mailto:minges@d-two.info)

