

MASTER IN CITY & TECHNOLOGY DIGITAL TOOLS AND BIG DATA 2021/2022

FACULTY DIEGO PAJARITO

Understanding flows, density and distribution



Multidimensional Data

A single object can be described using multiple variables

In econometrics, having more than three dimensions to describe a single phenomenon generates a panel a multidimensional data panel.

For advanced architecture, datasets are commonly build with tens of dimensions.

How many options do we have to analyse and understand these dimensions?

Uni / multivariate and geospatial data exploration

Density and distribution of geospatial objects

Density and distribution of quantitative variables

Data import and processing for massive data sources

Geospatial processing using distances and trajectories

* Web API for data ingestion



To provide an experience handling common tasks of big data, data science or data analytics.

The course provides a practical perspective of the main activities developed for urban analytics. From data collection, ingestion, analysis and visualization, the students will experience the workflow while getting their hands on extracting information from massive datasets.





Source Code

Examples of the tasks performed during the course

Gallery / Dashboard / Portfolio





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Submission

Poster format



To identify data endpoints (sources / outcomes) and data access methods in data-driven research projects.

To plan and evaluate the alternatives to ingest and process data to minimise impactful and costly failures.

To foresee potential automation tasks and optimisation strategies for data processing.



Size: A1

Format: PDF and Editable in the submissions folder Required (text): Title, data sources, conclusions and references

Aim:

Describe the data flows implemented as part of the studio project or an alternative research task.

Originally expected to continue with the studio groups but individual or alternative groups are accepted.





Access to Healthcare Resources in an **Emerging Latino Community**

Access to healthca

Access Score

-2.17 to - 0.70 -0.70 to -0.05

-0.06 to 0.28

IOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH Department of Epidemiology

Global Public Health Observatory

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Statistical Area, Baltimore City, 2015.

In recent years, Baltimore City has seen a dramatic growth in its immigrant communities. In 2014, 8.2% of Baltimore's population was foreign-born, a figure that nearly doubled between 2000 and 2014. Latinos are the largest and fastest growing minority in the country, and U.S.-born Latinos outnumber foreign-born Latinos in most states with the exception of the District of Columbia and Maryland.(1-3) In the last two decades, the influx of Latino immigrants has expanded to non-traditional Latino areas, such as Baltimore City (Figure 1).

According to the evidence, undocumented immigrants are exposed to several risks before, during and after migration Once in the U.S. they face additional stressors related to their documentation status, language and cultural barriers, fear of family separation, discrimination, preclusion of access to health insurance, and limited access to services

Immigrants in emerging communities face additional competent services for newly arrived populations. Thus, the unique and rapidly changing demography of Baltimore's Latino community, has not been extensively studied and the magnitude of the health needs in this population and possible health disparities are unknown



Figure 1: Hispanic and Latino Population by Community Statistical Area, Bultimore City 2000 and 2015. Source: American Community Survey (2011-2015 5-year estimates)

The purpose of this work is to describe and compare the access to healthcare services in the community statistical areas (CSA) in

Our hynothesis is that individuals who live in CSAs with higher concentration of Latinos will have lower access to healthcar services compared to the rest of the city.

Data Collection Data were extracted from the American Community Survey (U.S. Bureau of Census), and from the Baltimore Neighborhood Indicator Alliance.

Statistical procedures We created a score for each CSA for the access to healthcare resources based on two indicators commonly used to monitor access: (i) Percent of deliveries where the mother received early prenatal care (1st trimester), and (ii) Percent of population with healthcare insurance.

Z scores were calculated for each indicator in each CSA. Because indicators have different directions, the sign for the Z score for prenatal care was inverted. Therefore, a higher Z score represents less access. The average of these scores is the final healthcare access score we used to rank the CSAs. Finally, access scores were categorized in quartiles for choropleth presentation.

Table 1: Calculation of Z scores and access score by CSA

DA					
	Percentage of births where the mother ferround Prenatal Care in the Let Trimenter (222)	Zone	NAME covered by health insurance	Iscore	Acces Score
Mendale Projection (L. 1936)	102	0.01	13	-0.30	-9.11
Denthfold/for MByWood Hits	43.1	0.79	9.6	-0.21	0.29
Betar 60000	49.4	0.30	11.5	2.63	0.30
Blooklyr/Cursk Bay/Hawkins Point	41.7	0.71	26.0	2.55	1.12
Carton	81.6	2.83	4.6	-5.52	2.17
Cretoria/Vronklond	677	0.36	11.2	0.12	0.29
Chony Will Chicowork Early Webselets	12.1	4.0	9.2	0.35	0.28
Chinguiph Familtonicing	66.2	0.61	112	0.72	D16
Citro-Acces	45.7	0.54	25	248	500
Corry Caustry (Change) for	10.6	0.79	63	4.55	4.86
Duberolle Frysolistown	55.4	0.36	6.5	1.66	410
Edmondson Village	47.5	0.41	24.5	5.33	0.79
Pells Polen	57.4	4.55	8.2	4.47	-3.51
North Perio/Alcheon	61.4	0.36	7.8	-0.69	0.00
Glon-Falteraff	44.6	0.64	12.6	2.44	0.53
Grapher Charles Villago/Bancha	44.6	264	26	436	466
Greater Govern	65.6	0.48	10.6	0.05	6.22
Grinder Mondaymin	61.6	0.74	32.2	0.09	D41
Construction of Principal Principal Page 1985	26.6	0.15	27	-2.55	9.11
Grader Rowment	75.5	1.39	11.5	5.18	0.79
Hemiton	59.6	0.79	5.6	-129	-1.00
Harbor CarsCittle Bally	59.5	0.75	11.4	0.19	4.72
Harford/Ochodale	57.3	-0.54	9.2	4.34	-0.44
Highlandtown	56	-0.62	25.9	149	653
Howard Park/Wort Arlington	43	0.79	8.6	-0.42	0.19
Inner History/Tederal HIE	71.5	1.83	4.8	-0.51	0.67
Lauraville	59.8	4.79	9.5	-0.23	-8.50
inch fines	54.1	4.24	9.3	-0.31	-9.26
Midlion/East End	48.5	0.79	11.7	0.42	0.70
Medferd/karepder/Woodberry/Yenergton	68	1.54	6.4	-5.89	-5.32
Millows	60	429	8.5	-0.51	-8.65
Millery/Celebrare	55.3	6.13	11.3	0.15	609
Morell Park/Notes/Be Mount Westerday/Coldbaring	56 38.0	4.60	12.5	1.68	013
North Entimore/Guillon(Storreland	85.9	1.35	4.8	15.64	0.49
Nothecod	59.5	0.73	7.5	-0.78	-0.74
Oldsown, Middle East	54.5	-0.32	11.0	0.15	-3.06
Orangeville/East Highlandbown	41.5	0.53	345	3.71	2.32
Polismon Park North & East	67.3	0.39	33.5	1.16	0.84
Pen fort/Recover Hill	42.5	0.84	8.5	-0.51	0.16
Pierios/Arington/Hilles	38.1	1.25	13.3	9.60	1.05
Poppleton/The Terracos/Notice blacket	58.5	-0.19	13.5	0.74	0.29
Sandrose Minchester Variety Park	612	0.38	11.6	0.40	0.53
South Sollinger	21.5	1.87	6.8	0.57	0.42
Southeatern	32.6	1.67	17.2	1.59	1.93
Southern Park Heights	58	1.26	15.5	0.65	1.53
Southerni Baltimore	37.3	1.33	15.5	1.38	1.30
The Waverley	50	0.34	12.8	2.65	0.39
Uprocythralet Heights	38.3	1.23	98	-0.38	0.43

Table 2: Ranking of access score by CSA Access to Healthcare Resources by Community



The CSA where most Latinos live in Baltimore City, are

The areas with highest concentration of Latinos, Orangeville/East Highlandtown and Southeastern, had the highest access scores which translates to the lowest

Although it can't be assumed that these results represent the level of access of the Latino population directly, these findings align with previous evidence that suggests that emergent immigrant communities have poorer access to care.

Figure 2: Access to Healthcare Resources by Community Statistical Area, U.S. Bureau of Comus.

access to healthcare. (meaning worse access).

Since a large proportion of Latinos in Baltimore City are undocumented, most are unable to access public, private or employer-based health insurance, which creates an additional barrier to access healthcare services. On top of this, availability of culturally appropriate health services in Spanish are limited in areas with no historic presence of Latino communities. This makes assessing and measuring health needs difficult among this population, despite known multiple risk factors for health complications, which is also a limitation of our results.

those with the poorest access to healthcare according to our score. This could inform present and future efforts to allocate resources and design culturally appropriate

- Department of Epidemiology.
- Johns Hopkins, Bloomberg School of Public Health, Global Public Health Observatory.

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BIG DATA ANALYSIS



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STATISTICS DATA



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DATA ANALYTICS





DATA STORAGE



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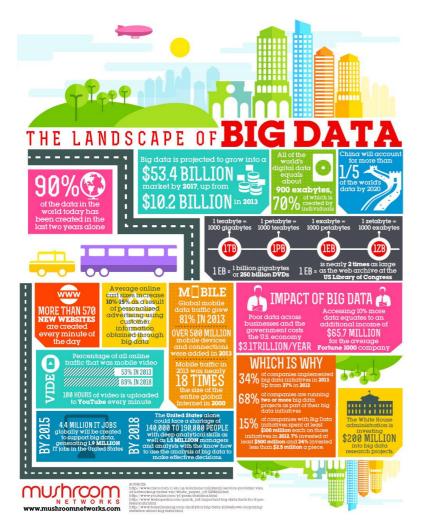














VOLUME

arge amounts of data.

VELOCII Needs to be analyzed quickly.

/ADIETY

Different types of structured and unstructured data.

Key questions enterprises are asking about Big Data:

How to store and protect big data?

How to backup and restore big data?

How to organize and catalog the data that you have backed up?

How to keep costs low while ensuring that all the critical data is available when you need it?

WHAT ARE THE VOLUMES OF DATA



30 billion pieces of content were added to Facebook this past month by 600 million plus users.

🞢 zynga

Zynga processes 1 petabyte of content for players every day; a volume of data that is unmatched in the social game industry.

You Tube

More than 2 billion videos were watched on YouTube... yesterday.



The average teenager sends 4,762 text messages per month.



32 billion searches were performed last month... on Twitter.

Everyday business and consumer life creates 2.5 quintillion bytes of data per day.



90% of the data in the world today has been created in the last two years alone.

WHAT DOES THE FUTURE LOOK LIKE?

Worldwide IP traffic will quadruple by 2015.



By 2015, nearly

3 billion people



will be online, pushing the data created and shared to nearly **8 zettabytes.**

HOW IS THE MARKET FOR BIG DATA SOLUTIONS EVOLVING?



\$3.2 billion



58% of respondents expect thei companies to increase spending on server backup solutions and other big data-related initiatives within the next three years.

torreferent been

2/3103 of surveyed businesses in North America said big data will become a concern for them within the next five years.

Asıgra

Blog Post: Up to 300 words summarising the data flows implemented and the positive and negative aspects of the implementation. The blog post must include the poster.

Submission Date: A date before Monday March 21

Grades: Friday March 25





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