Better Data for Local Decisions: The Promise of the Curated Data Enterprise

CNSTAT Workshop on A Vision for a New Data Infrastructure for Federal Statistics: The Implications of Using Multiple Data Sources for Major Survey Programs

Joseph Salvo, Institute Fellow

Social and Decision Analytics Division

Biocomplexity Institute & Initiative

University of Virginia

Introducing the Curated Data Enterprise

The U.S. Census Bureau has begun modernization activities towards creating a **universal frame** that could form the foundation for a transformative capability to **integrate** the Bureau's demographic and economic **surveys and censuses with administrative and third-party data.**

This new innovative state is called the **Curated Data Enterprise (CDE)**.

CURATED DATA ENTERPRISE

The Census Bureau of the Future

- Both an infrastructure and a continuously evolving ambition to **empower and enable** Bureau scientists and their data users to develop **new measures** of people, places, and the economy.

- Exploits **multiple data sources**, from sample surveys, censuses, and other official administrative and third-party data, which can provide **more robust, timely, and comprehensive measures** when combined.

Identifying and Characterizing Stakeholder Communities

Congress and the Legislative Branch

Apportions the House of Representatives, allocates funding to states, localities, and individuals, and formulates policy

Research

Provides the foundation for economic, social, and policy research

Public Policy

Supports public policy creation, program development, and administration including federal, tribal, state, and local governance

Business and Commerce

Repackages the data to create "value-added" products and services and derives economic context through analysis to inform decision-making

Non-Government Organizational (NGO)

Advocates for policies and programs and to monitor differential impacts across population subgroups and geographies

Media

Informs the general public about the socio-economic situation of U.S. residents and changes in measurement

General Public

Data collection respondents and beneficiaries from every program and policy that is informed by Census products

3

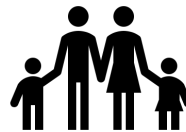# Let's Focus on Purpose, Use, and Changing Conditions

With the accelerating pace of change in our society and economy, we must constantly innovate how we collect and report official statistics to understand who we are, and where we are going.

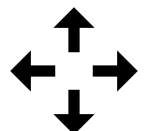|				
Equity and Inclusion	Counting Children	Family Units	Rural Communities	Local Businesses
Tribal Areas	Vulnerable Populations	Elderly Residential Care	The Unhoused	Migration
Climate Change	Gig Economy	Workforce Automation		Differential Undercount
Broadband Deployment	Emergency Preparedness	Economic Mobility	Commuting Patterns	Changing Demographics

Socializing the CDE - Seeking Stakeholder Feedback

1 ▶▶▶ **Convene stakeholder listening sessions to socialize the CDE concept and gather feedback**

2 ▶▶▶ **Synthesize feedback**
- Formulate "use cases" that capture the art of the possible
- Capture concerns that will need research attention
- Hone communication and messaging
- Identify internal and external infrastructure needs

3 ▶▶▶ **Develop use cases to frame discussions with researchers for research agenda development**
- Demonstrate the utility and value of the CDE
- Illustrate research gaps and challenges

Thinking Like a "Local"

More than 70 percent of the 31,600 Places in the U.S. have fewer than 4,000 persons.

Local Planners as Consumers of data: Knowledge of population and the local economy permit an assessment of decisions and strategies adopted by local officials.

Local Planners as Directors: Decisions and strategies affect the quality-of-life of residents.

6

Making Sense of the Headlines

Gig Workers

"Racial and ethnic differences stand out in the U.S. Gig workforce." *Pew Research Center*, December 2021.

"The Wild West: Gig workers on the front lines of the coronavirus pandemic lack basic worker protections." *Economic Policy Institute*, April 2020.

Migration Patterns

"In 2020, fewer Americans moved, exodus from cities slowed." *Pew Research Center*, December 2021

"New census data shows a huge spike in movement out of big metro areas during the pandemic." *Brookings,* April 2022

Nursing Homes

"COVID-19 crisis advances efforts to reimagine nursing homes," *JAMA Network*, October 2021.

"Covid awakened Americans to a nursing home crisis. Now comes the hard part." *Washington Post*, April 2021.

What is the "Art of the Possible?"
From the Local Planner's Perspective

Goal is to

1.Forge a path that leads to evidence-based decisions to mitigate shorter-term impacts related to the pandemic and devise longer-term strategies to promote economic growth

Based on

1.A timely and accurate view of the current demographic and social characteristics of the population and the economic conditions of individuals and businesses

Using

Data products that are actionable at a local level

Reacting to the Pandemic: Questions and Strategies

Thinking Like a "Local" - Three Key Knowledge Areas for the local town planner:

1. Local economy/business: How are residents able to sustain themselves economically?

2. Are residents reacting to the pandemic "with their feet?" What is the impact on population?

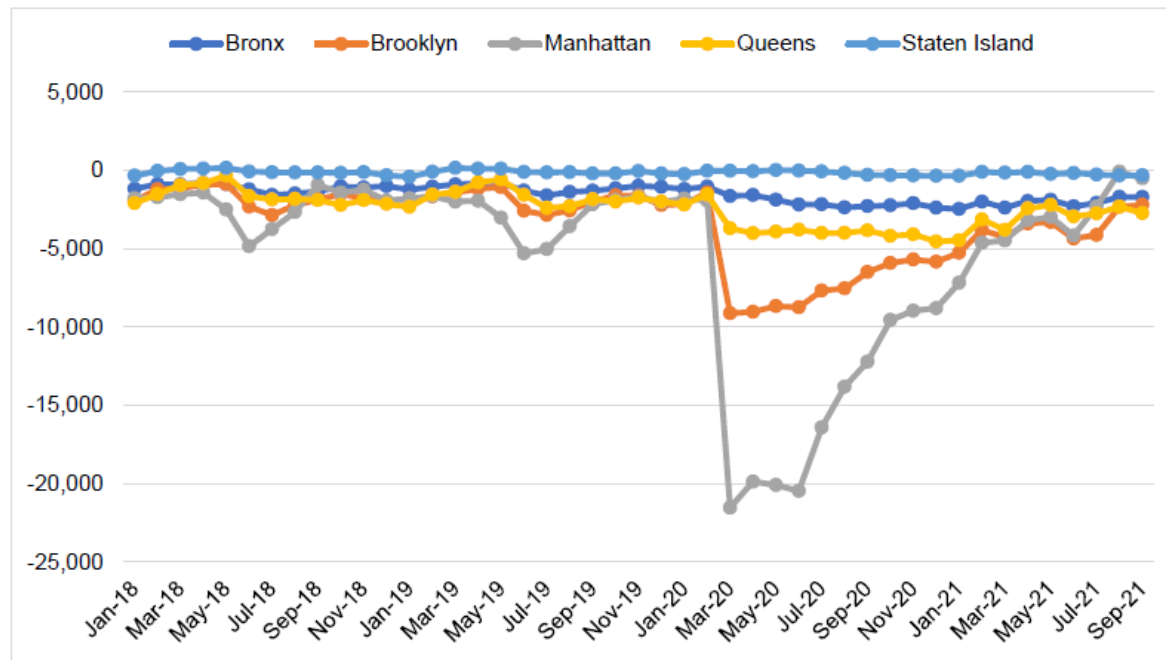3. What about those who are most vulnerable, e.g., persons in nursing homes?

What the Locals Need to Know

Information About:	What Is:	What Can Be: "The Art of the Possible"
Local economy (making ends meet)	Labor Force, Occupations and Industries (ACS, CPS, LEHD)	Complete picture of work: GIG workers, remote work, equity and "vulnerable" workers
Level and Type of Migration (i.e., Level of temporary, permanent, and seasonal moves)	ACS residence one year ago (in-movers); county gross migration; net migration as a residual	Moves in something close to real-time using external data (e.g. cellphone detailed records, postal changes of address, commercial mover data)
Vulnerable Groups (crisis populations)	Group Quarters (GQ) population based on decennial census; many federal surveys and administrative data sources.	Nursing home facilities information from business frame, state licensing data, emergency preparedness lists

Example Using U.S. Postal Address Data: New York City

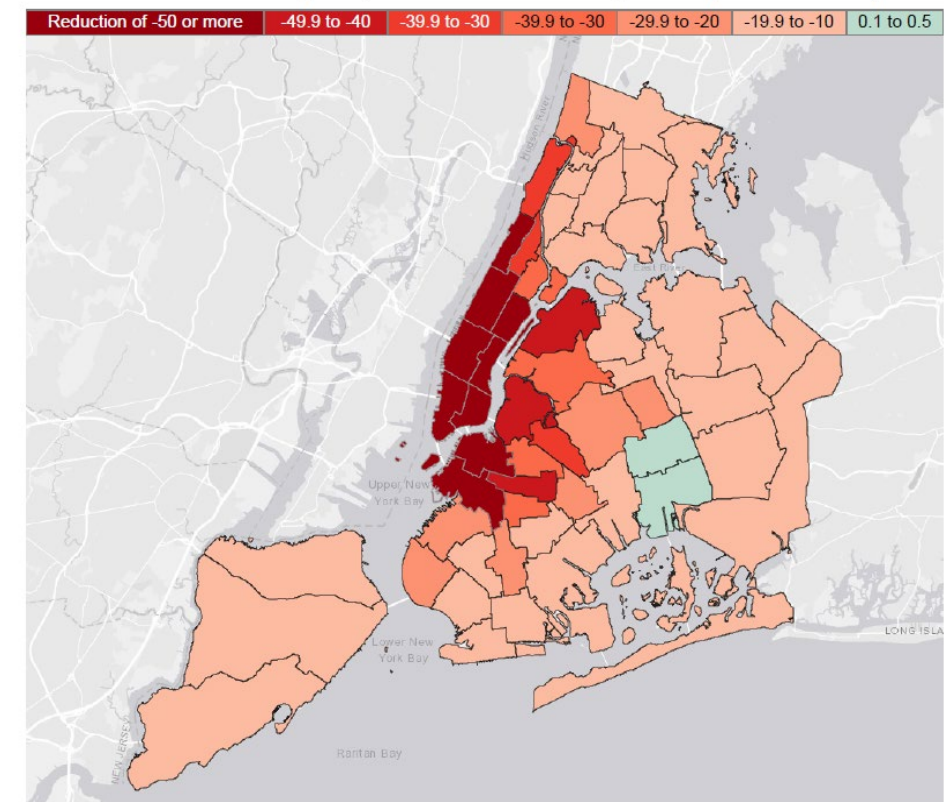**Net residential movement was highest in areas with higher incomes**

Chart 3. Monthly Net Residential Moves by Borough, 2018-2021

SOURCE: NYC Comptroller's Office analysis of United States Postal Service, "Change of Address Stats," https://about.usps.com/who/legal/foia/library.htm.

Note: Includes temporary and permanent moves.

Map 1: Change in Net Residential Moves from Pre-Pandemic Trend in 2020 (Change in Net Residential Moves per 1,000 Residents in 2020, as Compared to 2019)

SOURCE: NYC Comptroller's Office analysis of United States Postal Service, "Change of Address Stats," https://about.usps.com/who/legal/foia/library.htm.

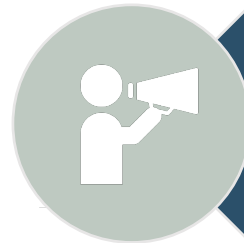Note: Per-capita figures based on 2020 decennial census data. Includes temporary and permanent moves.

Building Models Using Multiple Data Sources

1. Recognize that the use of multiple data sources does not necessarily mean linking microdata records

2. Identify multiple sources of data that are symptomatic of trends and integrate them into more useful models that are timelier

3. Create models where multiple sources combined produce a value-added picture that is greater than the sum of the parts

4. Be realistic about the precision needed to guide decisions

What Can the Future Look Like?
Linked frames as the foundation for the CDE

Better local data user communication: A better understanding of what is required for decisions at the local level

A better understanding of equity in dissemination and access to data for decision making

The quest for perfect measures can be the enemy of the creation of good measures – all data have limits and models do work

13

https://biocomplexity.virginia.edu/institute/divisions/social-and-decision-analytics/census

A 21ST CENTURY CENSUS CURATED DATA ENTERPRISE

A Bold New Approach to Create Official Statistics

Spring 2022 Report

Sallie Keller, Ken Prewitt, John Thompson, Steve Jost, Chris Barrett, Sarah Nusser, Joe Salvo, and Stephanie Shipp

UVA | BIOCOMPLEXITY INSTITUTE

UVA | BIOCOMPLEXITY INSTITUTE

Proceedings   News   Events   Intranet

THE INSTITUTE   OUR APPROACH   OUR RESEARCH   UVA: OUR SHARED VISION

A 21st Century Census Curated Data Enterprise

Supporting Innovation at the U.S. Census Bureau

Numquam sagittis voluptate! Quidem diam quasi? Donec turpis dis aspernatur, itaque libero! Nunc quas imperdiet, maxime! Dignissimos blandit

Reports
Spring 2022: A Bold New Approach to Create Official Statistics

White Papers
New ideas for a new era

Appendices

In the News

Innovation
U.S. Census Bureau's History of Innovation

Use Cases
Art of the Possible

UVA | BIOCOMPLEXITY INSTITUTE

For additional information please contact Joseph Salvo at ckp7gd@virginia.edu.