

Building Smart and Inclusive Communities: Detroit and Beyond

2018 Lent Upson Lecture

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How the Internet Matters for Opportunity

Economic Opportunity

- Wages (panel study) (DiMaggio and Bonikowski 2008)
- For less-educated workers (Mossberger, Tolbert & McNeal 2008)
- “Human capital” enhancing activities such as education and health, economic activities such as banking, buying products (DiMaggio et al. 2001).

Democratic Participation & Rights

- Political participation, knowledge, interest & civic engagement (Mossberger, Tolbert and McNeal 2008; see Boulianne 2009 for a meta-analysis)
- Access to government services and information – digital government

Access to the internet is a human right – United Nations 2012

Digital Citizenship

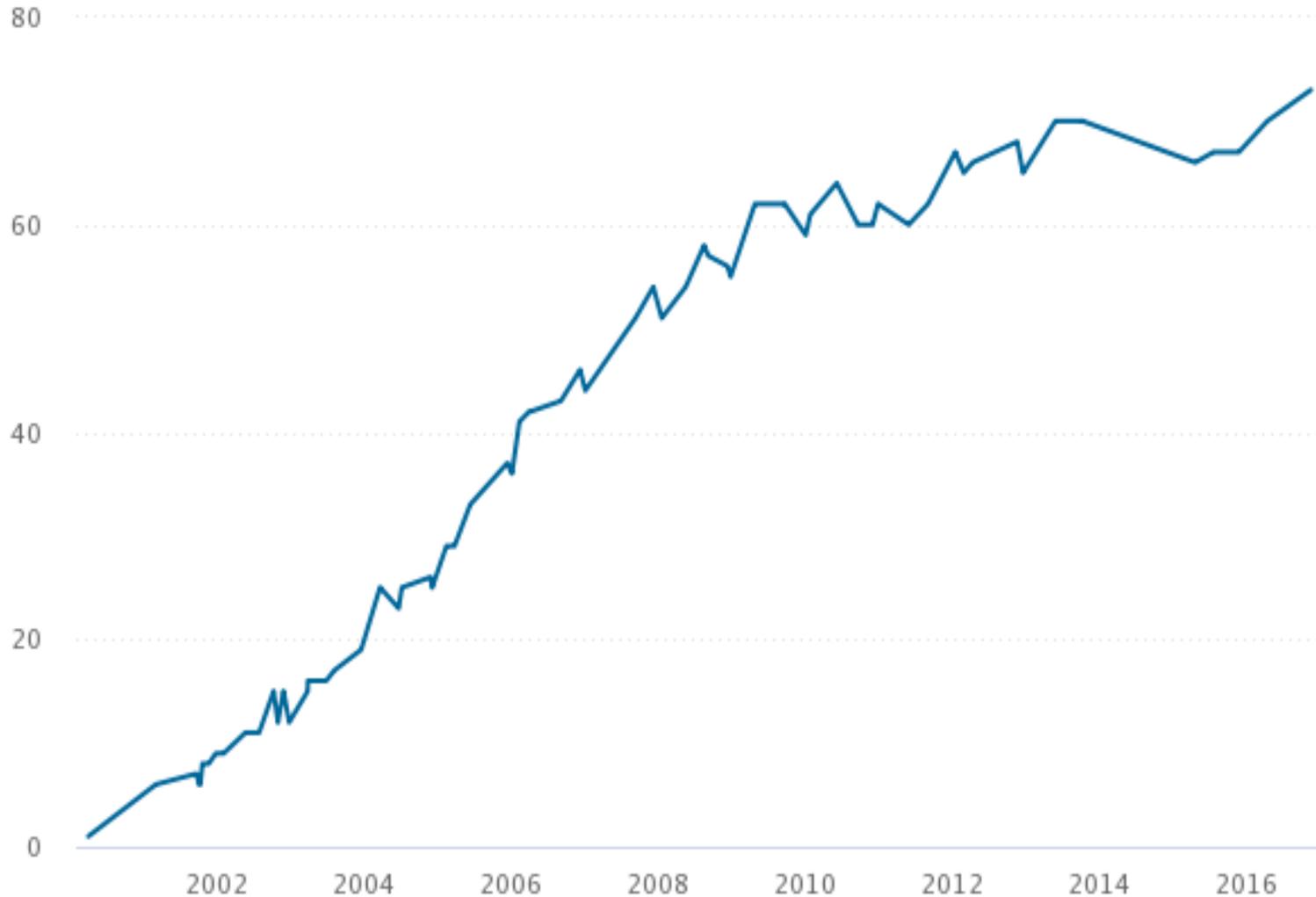
Ability to participate in society online – Mossberger, Tolbert & McNeal 2008

Can be measured by activities online

Requires regular access and effective use

- **Regular access** – home access rather than public access only
- Quality of access - broadband speeds that enable a range of uses, activities online, multiple devices to be “fully connected”
- **Skills for effective use**
 - Technical competence – across devices, platforms, apps
 - Information literacy in online environment
 - Ability to search for, evaluate, apply information
 - Basic literacy, critical thinking, educational competencies
 - Data literacy with evolution of open data
 - Knowledge about safe, secure, responsible use – social media and the Internet of Things
 - Content creation and communication skills

% of U.S. adults who are home broadband users



Graph shows 73% in 2016

Pew January 2018 data
65% with broadband at home

20% are smartphone-only internet users (12% in 2017)

Adoption curve flattening out/fluctuating nationally

Source: Surveys conducted 2000-2016.

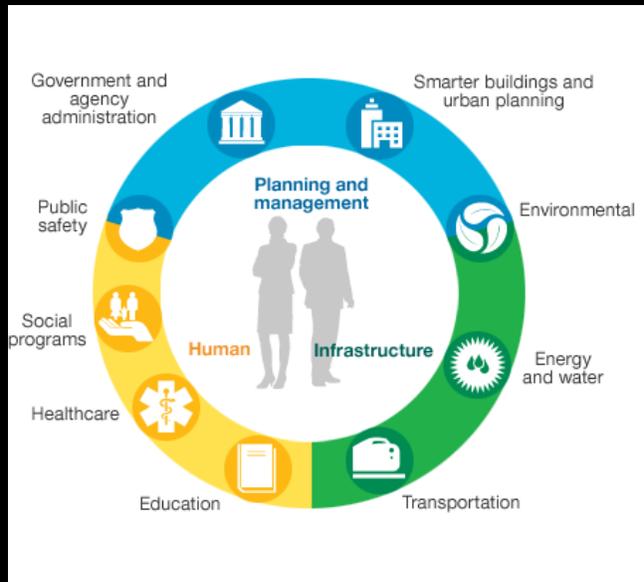
PEW RESEARCH CENTER

Smartphones and Digital Citizenship – Closing the Gap?

- Mobile-only internet users young, African-American, Latino, low-income, less-educated (Pew Research Center 2018; Mossberger, Tolbert and Anderson 2017)
- Personal and continuous access, but smaller screens and keyboard limit uses for filling out forms, reading text not formatted for mobile
- Mobile-only users overall do fewer economic and civic activities online than those with home broadband, *but . . .*
- African American and Latino mobile-only users in low-income neighborhoods do more of these activities online than non-Hispanic white mobile-only users (Mossberger, Tolbert and Anderson 2017)
- But, broadband at home matters for digital citizenship

Digital Citizenship and Community Capacities

Network externalities - Benefits to individuals and society increase as the number of users increase



Widespread use increases capacity for

- Smart Cities innovation – energy, environment, transportation and more
- Digital government – cost-savings and improved services
- New platforms for participation – need equitable and representative participation
- Emergency management – speedy communications
- Education beyond the classroom – homework, parental involvement, online education
- Economic development & workforce development

Two Narratives on Cities in the Digital Age

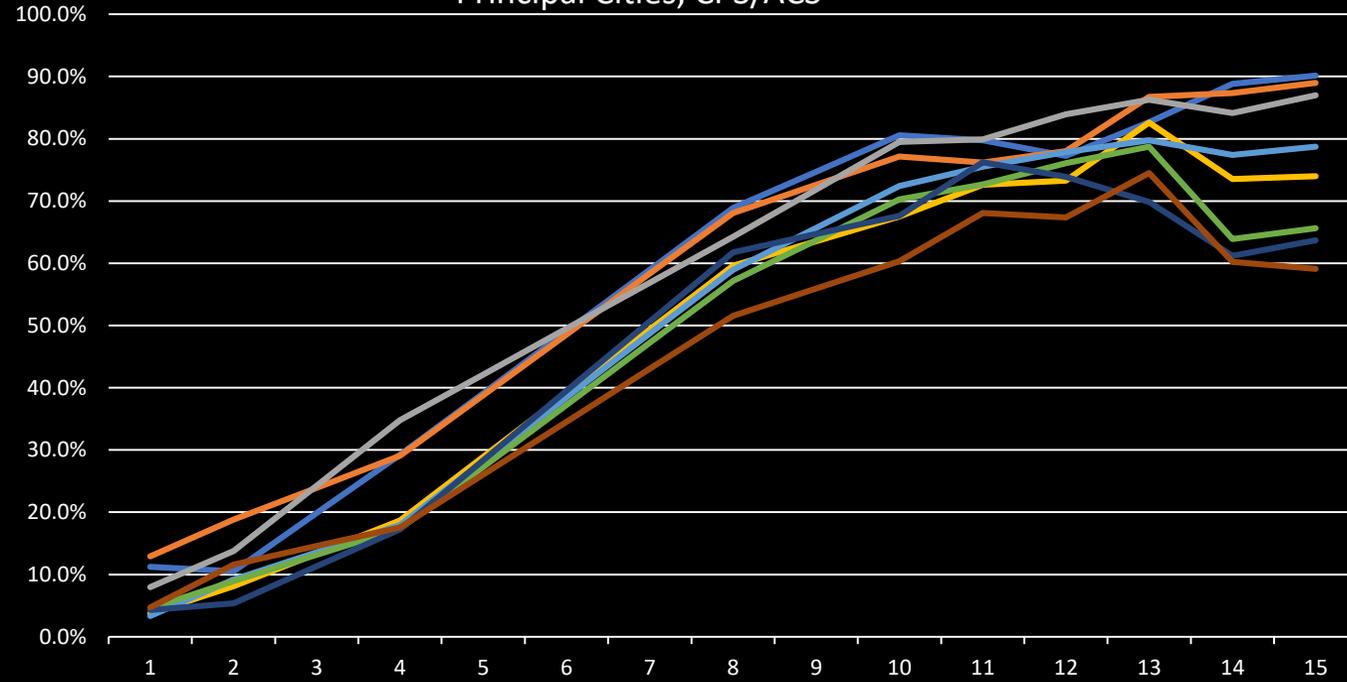
Innovation

- Cities, metros as engines of economic growth, research & innovation, culture & creativity – density, clustering, scale, concentration of specialized skills (Katz and Bradley 2013; Glaeser 2011)
- Leaders in problem-solving, collaborative, innovative governance (Barber 2013; Katz and Nowak 2017; Goldsmith and Crawford 2014; Goldstein & Dyson 2013)
 - Global smart cities movement
 - Open data & big data, including Bloomberg's What Works Cities

Inequality

- Rise of superstar cities in knowledge economy (Brookings 2018)
- Larger income disparities between regions; the great divergence (Moretti 2012); winner-take-all urbanism (Florida 2017)
- Growth of concentrated poverty within cities and metros (Kneebone and Holmes 2015; Allard 2017)

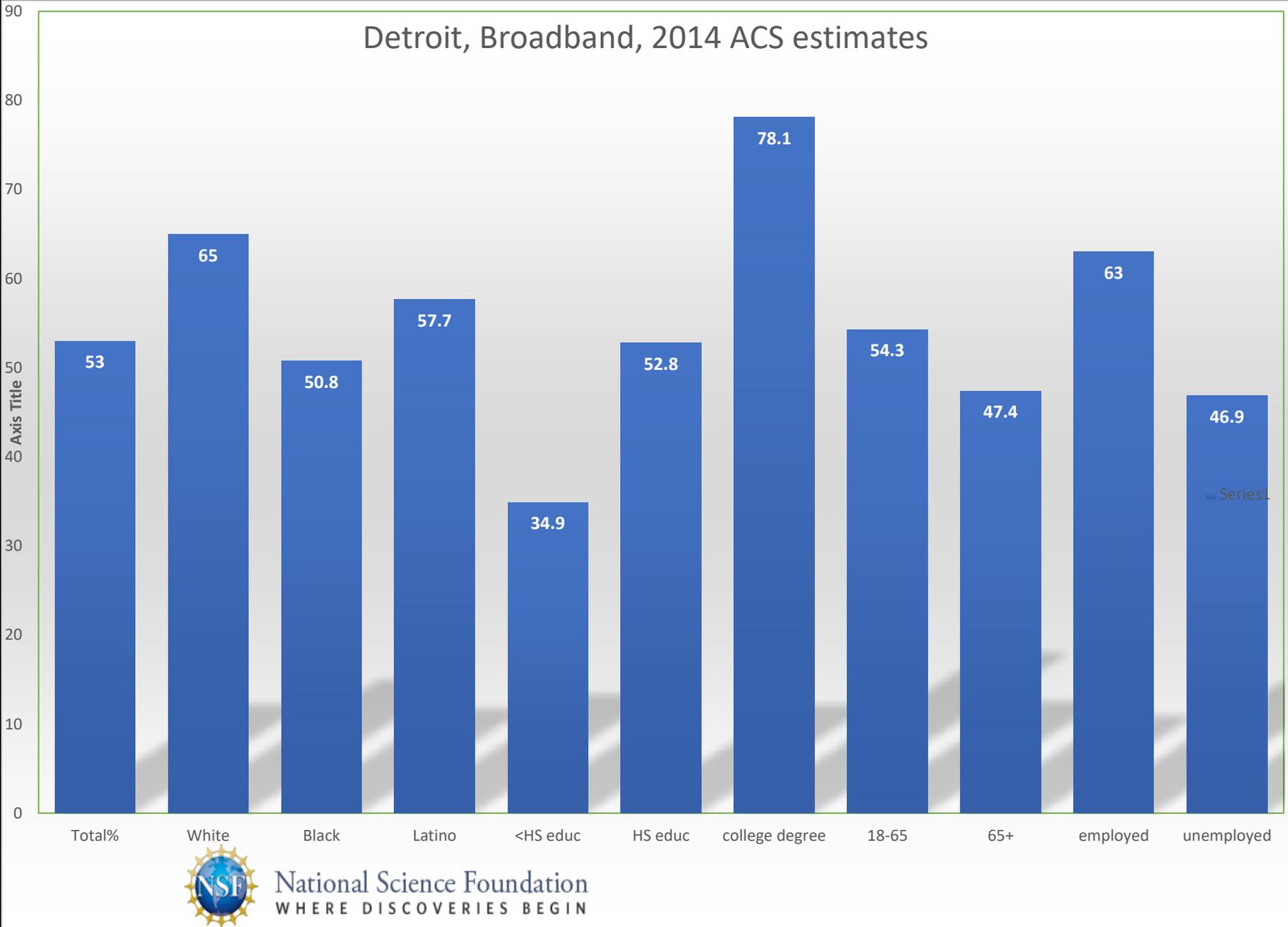
Broadband 2000-2014, Principal Cities, CPS/ACS



- San Jose-Sunnyvale-Santa Clara, CA
- San Diego-Carlsbad, CA
- Seattle-Tacoma-Bellevue, WA
- Chicago-Naperville-Elgin, IL-IN-WI
- New York-Newark-Jersey City, NY-NJ-PA
- Detroit-Warren-Dearborn, MI
- Cleveland-Elyria, OH
- Memphis, TN-MS-AR



Source: Broadband Data Portal, City Time Series,
<https://policyinformatics.asu.edu/broadband-data-portal/dataaccess/citydata>



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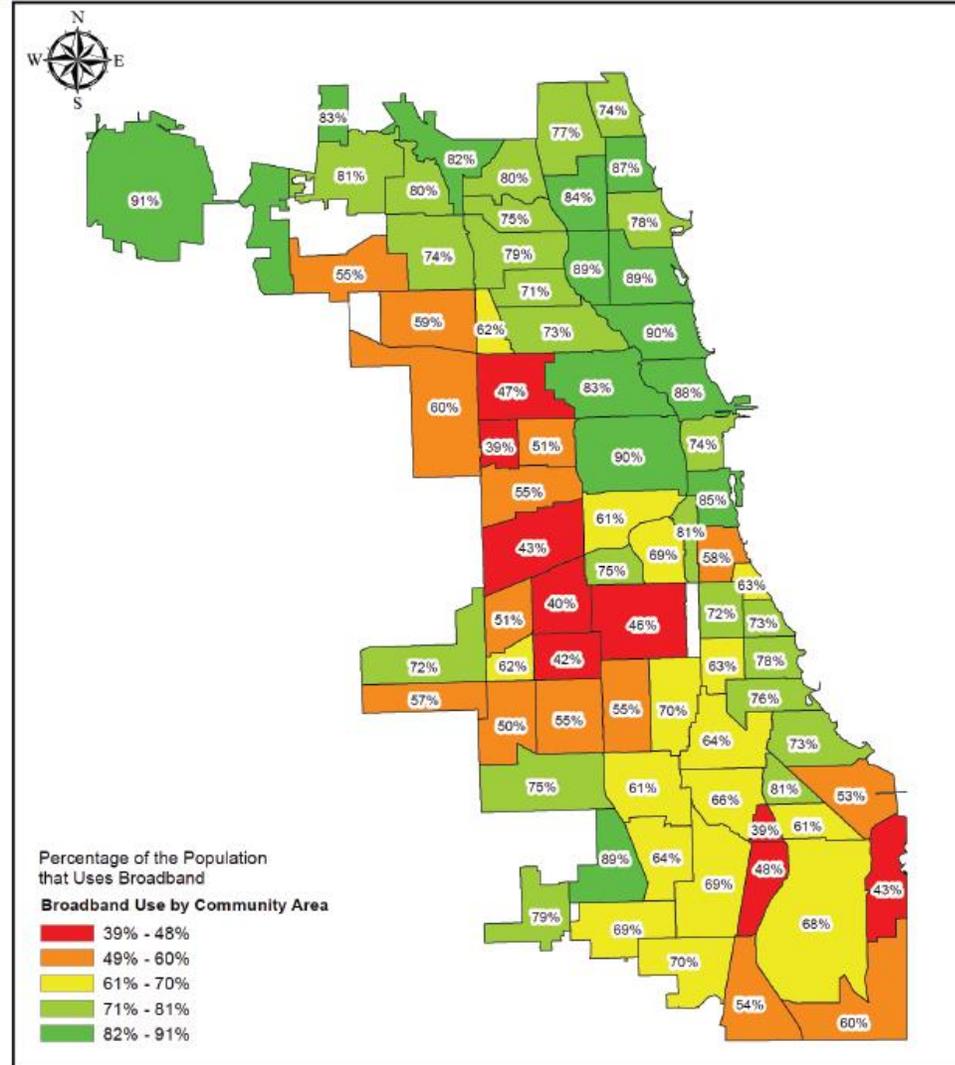
Variation within Cities

CHICAGO NEIGHBORHOODS, 2013



Broadband Use by Community Area

2013 Chicago Survey



Partnership for a Connected Illinois - October 28, 2014



Chicago Surveys, 2008-2013

- Unique neighborhood-level data for Chicago across 77 official community areas, 2008-13
- RDD survey of 2000-3400 Chicago residents in English and Spanish, stratified sampling, including cell phone sampling
- Geocoding of data based on cross streets
- Random intercept multilevel statistical modeling with post-stratification weights leverages neighborhood-level socioeconomic data to improve estimates based on individual-level data; addresses problem of small samples in each community area
- Census tract demographic variables (poverty, race, ethnicity, HS education, age 65+)
- Predicted probabilities for 20+ variables, including broadband at home, Internet use anywhere, activities online, barriers

HOW DO TECHNOLOGY USE AND BARRIERS VARY ACROSS NEIGHBORHOODS?

Digital Excellence in Chicago: Tracking Trends in Internet Use 2008-2013 – Mossberger, Tolbert & Anderson 2015

Table 8. Internet Use and Online Activities for Lowest-Ranked Chicago Community Areas, 2013

<u>Broadband Adoption Lowest-Ranked Area (%)</u>	<u>Internet Use Percentage</u>	<u>Health Info Percentage</u>	<u>Job Search Percentage</u>	<u>Online Class Percentage</u>
WEST GARFIELD PARK (39%)	63	49	30	17
BURNSIDE (39%)	57	50	24	17
BRIGHTON PARK (40%)	61	49	25	17
GAGE PARK (42%)	64	51	28	16
SOUTH LAWNSDALE (43%)	62	53	33	17
EAST SIDE (43%)	61	52	24	15
CITY AVERAGE (70%)	84	74	58	45
<u>Broadband Adoption Lowest-Ranked Area (%)</u>	<u>Transportation Info Percentage</u>	<u>E-government Info Percentage</u>	<u>Chicago Govt. Website Percentage</u>	<u>Politics Info Percentage</u>
WEST GARFIELD PARK (39%)	45	36	41	35
BURNSIDE (39%)	36	40	40	38
BRIGHTON PARK (40%)	36	32	37	26
GAGE PARK (42%)	34	31	36	25
SOUTH LAWNSDALE (43%)	34	33	36	27
EAST SIDE (43%)	35	35	36	30
CITY AVERAGE (70%)	66	61	58	60

Neighborhood Effects: A Vicious Cycle?

Concentrated poverty constrains opportunities and choices, affecting skills, knowledge and support, costs (Wilson 1987, 1996; Jargowsky 1997; Massey & Denton 1993)

- Unequal educational opportunities, info literacy (Orfield & Lee 2005)
- Unequal access to jobs, including those with IT use (Kaplan and Mossberger 2012)
- Less IT exposure or experience within social networks in poor neighborhoods for informal learning and support (Warschauer 2003)
- Higher prices in poor neighborhoods (for basic goods as well as IT), fewer incumbent IT providers competing? (Brookings 2008)

Technology disparities in turn affect neighborhood context for employment, economic development, education, civic engagement, and more

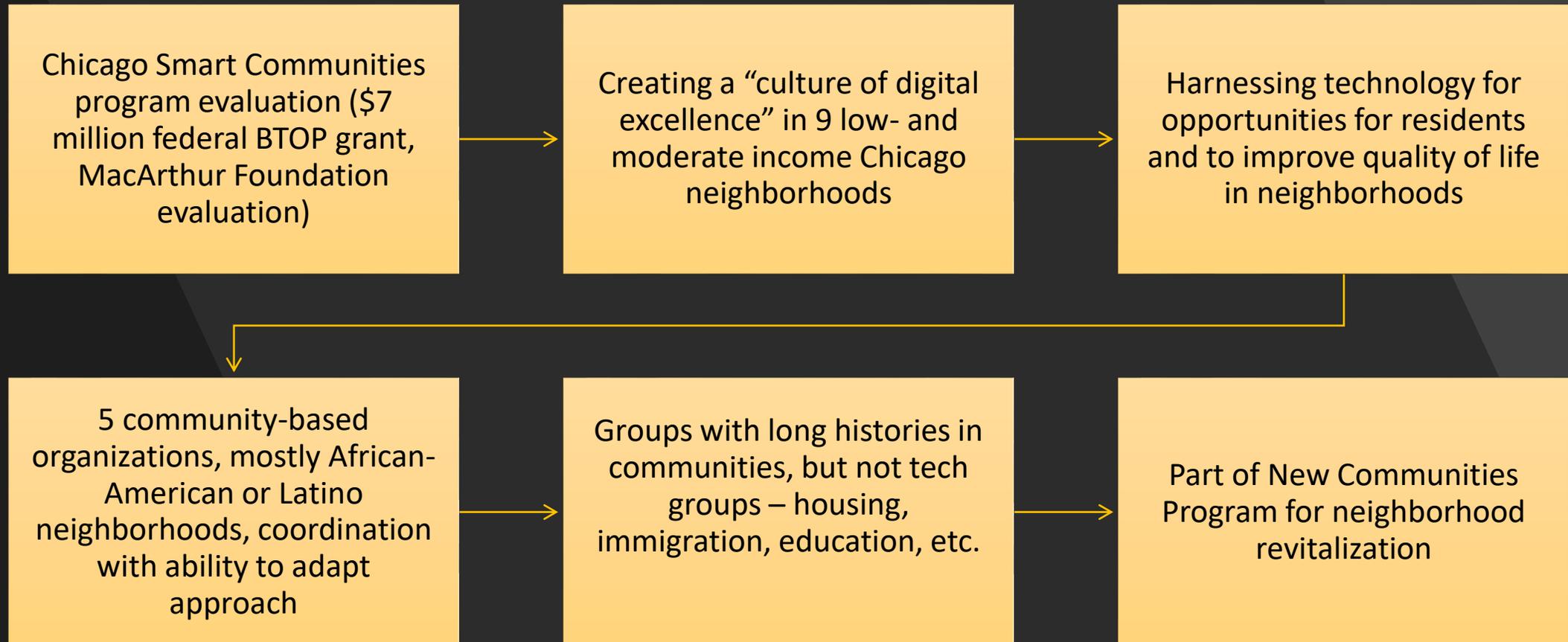
How Place Matters for Technology Use

- Segregation (and concentrated poverty) magnify barriers to broadband adoption, beyond-individual-level income, education, race/ethnicity, etc. (Mossberger, Tolbert, Bowen and Jimenez 2012)
- For African Americans, living in segregated and poor neighborhoods increases barriers of cost and difficulty using the internet, but not lack of interest – for Latinos, all of these barriers are increased
- Neighborhood income explains differences between African Americans and non-Hispanic whites in home access and internet use , but not all differences for Latinos (national data – Mossberger, Tolbert and Gilbert 2006)

BUT

- Studies of computer adoption show positive spillover effects – neighbors in close proximity are more likely to adopt as well (Goolsbee and Klenow 2002)
- Can place-based initiatives produce these positive spillovers for technology use in communities?

Smart Communities: Breaking the Cycle ?



Critical Mass of Programs

2010-2012

City of Chicago Grant, Chicago LISC as coordinator of 5 community-based lead agencies

- FamilyNet Centers (digital training, job search, financial literacy)
- Civic 2.0 – training for block clubs, community groups
- Tech Organizers – outreach
- Business Resource Networks
- Several youth programs including YouMedia
- Community Portals
- Ads on buses with photos of residents, benefits of being online
- Some discounted Internet 2nd year



Smart Communities
CHICAGO DIGITAL EXCELLENCE INITIATIVE

Tracking Community-Level Change

(Mossberger, Tolbert & Anderson 2014)

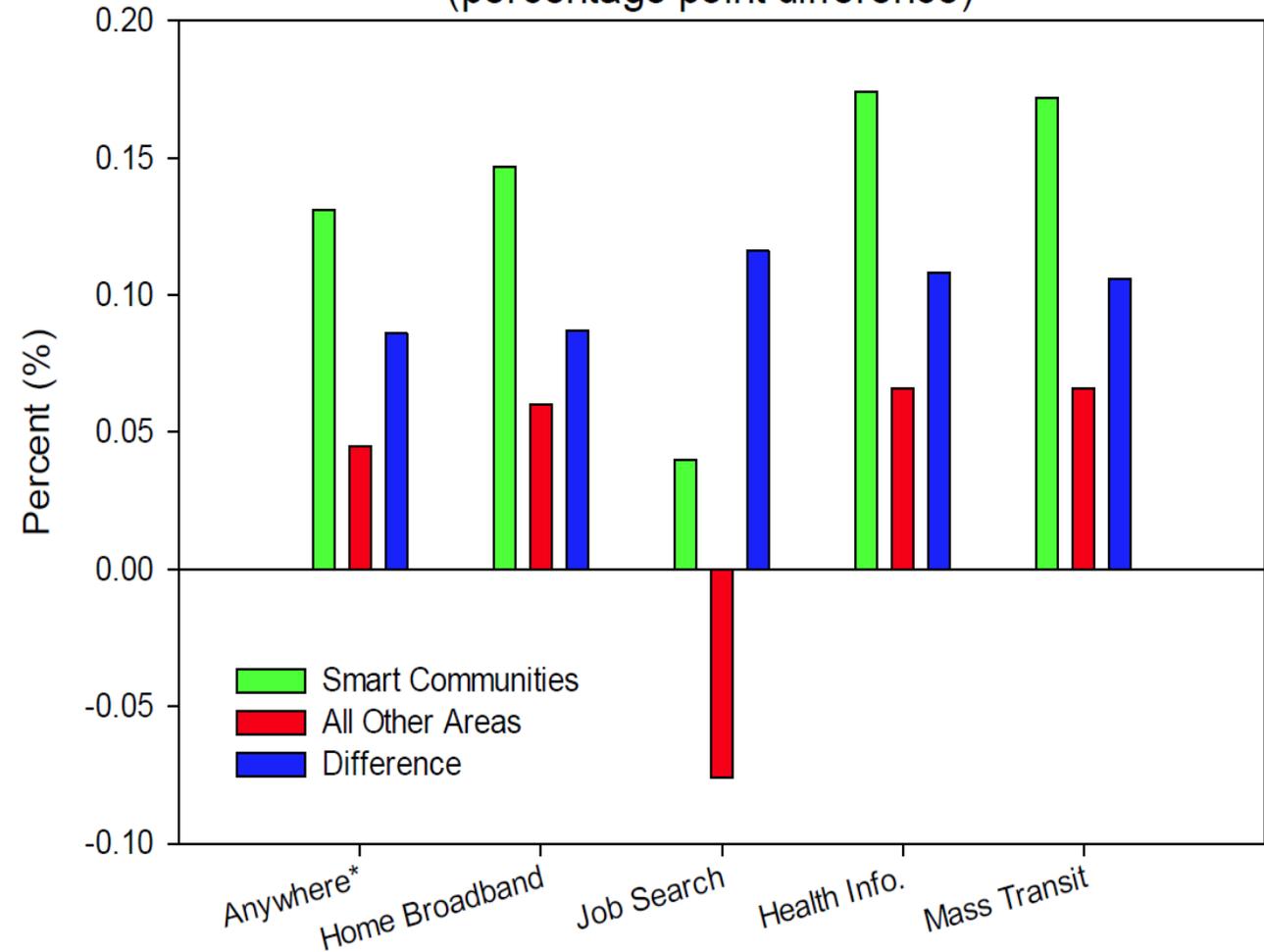
- A new approach for evaluating digital inclusion – can change occur on a neighborhood scale?
- In addition to a formative evaluation and participant surveys for FamilyNet and Civic 2.0
- Comparing 9 Smart Communities to other Chicago neighborhoods, controlling for demographic change
- Multilevel models, Chicago 2008, 2011, 2013 citywide surveys
- 2008-2011 – Mid-intervention, Smart Communities had higher levels of internet use in any location, but no other statistically significant differences
- By 2013, significant and substantively large differences in several areas, including home broadband and activities online

Results, 2008-13

The Smart Communities had statistically significant increases that were 9-12 percentage points higher than similarly-situated neighborhoods for these outcomes

(other activities online not significantly different)

Change in the Probability of Internet Access 2008-2013
(percentage point difference)



Explaining Neighborhood Change

We can't know with certainty that the Smart Communities Program was the cause of these higher increases

But controlling for population change (e.g. gentrification) eliminates a likely rival explanation

While only about 3,000 people participated in training, neighborhood-level change may be a result of -

- Spillover effects from outreach through tech organizers, ads on buses, word of mouth
- Spillovers from training – 1/3 of FamilyNet participants reported helping others to use the internet, and that 1/2 of those helped were in the same neighborhood
- Integration of technology into activities of lead agencies and other community organizations – creating motivation, support and opportunities to use technology
- Differences between 2011 & 2013 – More experience online, broader implementation, Comcast Internet Essentials?

Lessons from Chicago's Smart Communities

Place matters for constraints on technology use, but may be a positive force as well

Barriers and needs differ across African-American and Latino neighborhoods, suggesting that community-based leadership is important

Digital citizenship builds a foundation for inclusive innovation – communities involved on hackathons, open data, and Array of Things public engagement

Research on longer-term impacts needed – employment, health, education, etc.

Reconciling the Two Narratives: Innovation and Inequality

- Human capital key for innovation and reducing inequality - Moretti 2012
- Education and digital citizenship needed for human capital
- Education and digital citizenship needed for equity, democratic participation and representation
- Local governments must provide leadership for developing inclusive innovation in their communities

