

The Communication Revolution and Equity: Implications for Obesity-Related Communications

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Key 21st Century Revolutions

- Life Sciences Revolution
- Informatics Revolution

Five Key takeaways

Communication Revolution

#1

Proliferation of Platforms and (Mis)information



Features of the ICT revolution

- Proliferation of information platforms
 - Generation and delivery
- Generation of an enormous amount of data from different sources
- Networked environment

How much data do we generate?

Over 2.5 quintillion bytes of data are created every single day.....By 2020, it's estimated that 1.7MB of data will be created every second for every person on earth

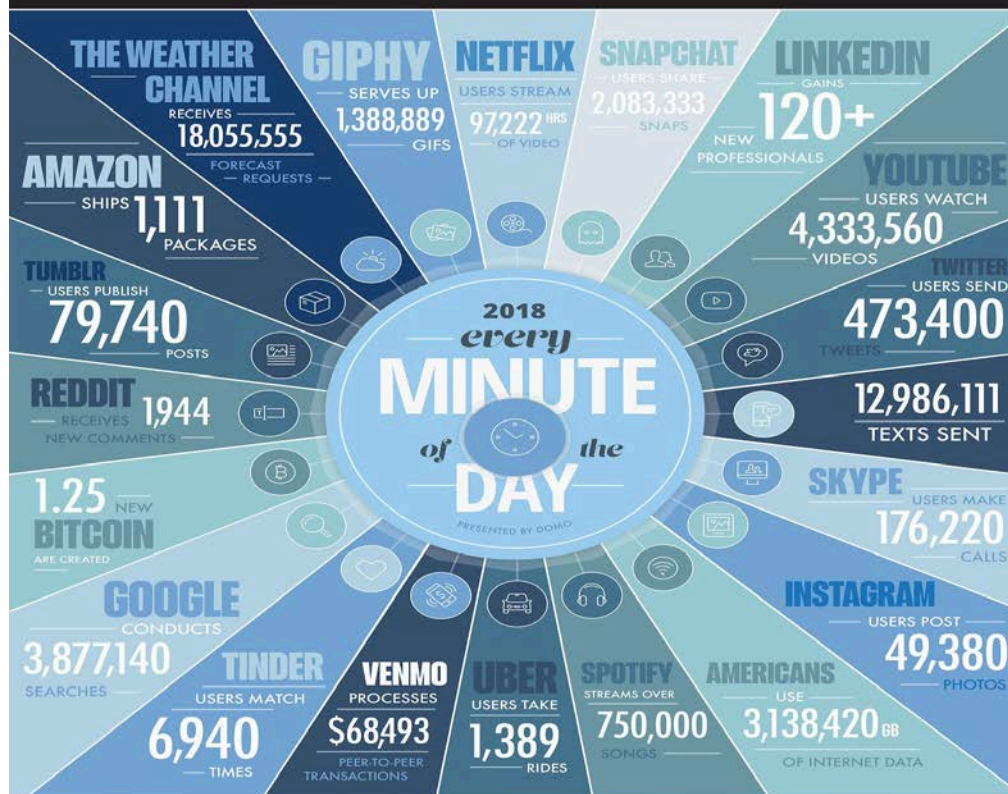
Ahmed, Irfan (2018). How much data is generated every minute? Available at <https://www.socialmediatoday.com/news/how-much-data-is-generated-every-minute-infographic-1/525692/>. Accessed on January 26, 2019

DOMO

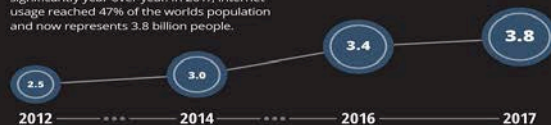
DATA NEVER SLEEPS 6.0

How much data is generated *every minute*?

There's no way around it: big data just keeps getting bigger. The numbers are staggering, but they're not slowing down. By 2020, it's estimated that for every person on earth, 1.7 MB of data will be created every second. In our 6th edition of Data Never Sleeps, we once again take a look at how much data is being created all around us every single minute of the day—and we have a feeling things are just getting started.



The world's internet population is growing significantly year-over-year. In 2017, internet usage reached 47% of the world's population and now represents 3.8 billion people.



GLOBAL INTERNET POPULATION GROWTH 2012-2017 (IN BILLIONS)

The ability to make data-driven decisions is crucial to any business. With each click, swipe, share, and like, a world of valuable information is created. Domo puts the power to make those decisions right into the palm of your hand by connecting your data and your people at any moment, on any device, so they can make the kind of decisions that make an impact.

Learn more at domo.com

SOURCES: STATISTA, LINKEDIN, INTERNET LIVE STATS, EXPANDED RAMBLINGS, SLASH FILM, IFAA, BUSINESS OF APPS, INTERNATIONAL TELECOMMUNICATIONS UNION, INTERNATIONAL DATA CORPORATION



https://www.socialmediatoday.com/user_media/diveimage/internet_minute_info2.jpg

- 2013: 4.4 zettabytes
- 2020: 44 zettabytes
- zettabyte is equivalent to 44 *trillion* gigabytes

Accessed at <https://www.northeastern.edu/levelblog/2016/05/13/how-much-data-produced-every-day/> on January 28, 2019

*Information
Deluge.....*

*Limited or no
gatekeeping*



#2

The Production of Science and Health Information is not the realm of scientists alone



Who generates health “information”?

- Mass Media
 - Journalism
 - Popular culture
 - Social Media
- Private Sector
- Activists Groups
- Health systems



Sources of Health Information

- Private Sector Communications
 - Influences perceptions of risk, promotion of social norms, and risk behaviors
 - Tobacco industry influences health reporting via strategic communications and marketing communications
 - Beverage industry's marketing tactics contribute to the U.S. obesity epidemic
 - The role of the private sector drowns out accurate scientific information



Marketing Budgets for each of these products



- Coke:
 - 2014: \$3.499 billion
 - 2013: \$3.266 billion
 - 2012: \$3.342 billion
- McDonalds
 - 2013: \$989 million
 - 2012: \$967 million
- Cigarettes and smokeless tobacco
 - 2012: \$9.6 billion
 - Top 3 advertisers by brand
 - Marlboro
 - Newport
 - Camel

#3

Information \neq Communication



The New York Times
ON THE WEB

**Coffee as a Health Drink?
Studies Find Some Benefits**

CNN.com.

**Study links caffeine to
higher blood pressure**

abc NEWS

Coffee seen not to raise heart attack risk: study

One cup of coffee a day 'risky'

**BBC
NEWS**

**A cup of confusion:
Is coffee healthy or not?**

**MS
NBC**

70%
OF COLON CANCER
CASES FOUND IN NORTH
INDIA


- SAMBAR FOUND TO HAVE ANTI-TUMORIGENIC PROPERTIES
- SAMBAR IS A COMBINATION OF SPICES AND FIBROUS VEGETABLES

SPICES IN SAMBAR

- Coriander seeds
- Fenugreek seeds
- Turmeric rhizomes
- Black pepper
- Curry leaves
- Cumin seeds
- Asafoetida

INSTANCES OF COLON CANCER ARE HIGHER IN NORTH INDIA BECAUSE OF WHEAT DIET WHICH LEADS TO CONSTIPATION. THE SOUTH INDIAN DIET, OF RICE AND CURRY, SUPPOSEDLY HELPS IN BOWEL MOVEMENT.

The Real Indian Stories



Did You Know?

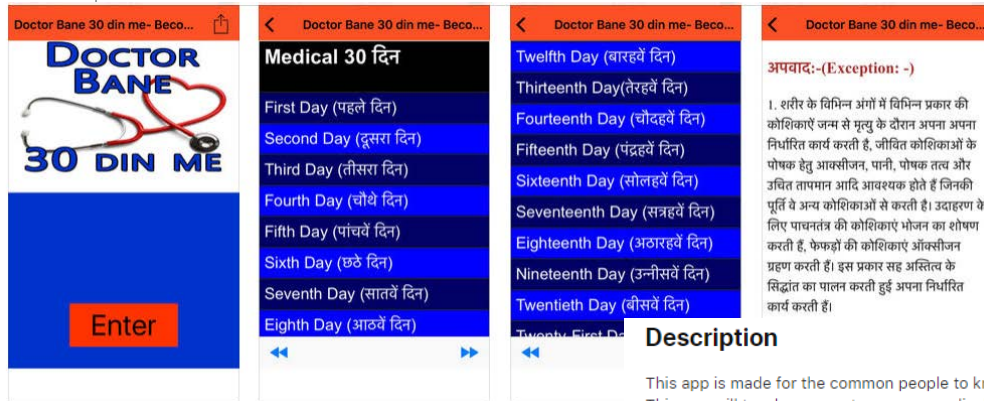
Why you shouldn't stand and drink water??

We have always heard our elders saying that we should not stand and drink water. According to Ayurveda, when you stand and drink water your nerves are in a state of tension. This creates problems like Arthritis and Joints damage. This could also give rise to severe heart problems. Even medical science now agrees to this.

Please avoid drinking water in standing position.

Share this for the ones you care!!

Become a Doctor in 30 days- iPhone app



<https://itunes.apple.com/us/app/doctor-bane-30-din-me-become-doctor-in-30-days/id1206849412?mt=8>

Description

This app is made for the common people to know the various facts and gain knowledge to live a healthy life.

This app will teach you most common medical things daily till 30 days which every person should know. Doctors generally follow a lot of nuske or remedy to solve the disease of the patients. Various medical facts are mentioned in this app using which you can understand which medicine affects which body parts. This app is a virtual medical course that will help you understand the basics of medicine and will be a good friend for you while trying to master the basics of medical terminology.

The most important thing about this app is that it is in Hindi language and hence it will be easy for you to follow the instructions mentioned in this app. You will be glad to have realized so many important concepts after going through this app. Rest assured that you will be on the path to attain great height by using this app.

This app is free of cost and can be used offline.

Category:-

Anatomy, Physiology, Body Parts, Medicine Name, Disease and Treatments, First Aid, Medical Instruments, Amazing Medical Facts

Some Features of This App

Offline App so does not require internet connection.

100% free application

Beautiful user friendly interface

Copy to clipboard feature to set status where you want to update (paste).

-- Best feature is that you can select your favorite tip and bookmark it or add it to favorite.

Do not forget to give your feedback and please give rating if you like our app.

Consequences

Consequences

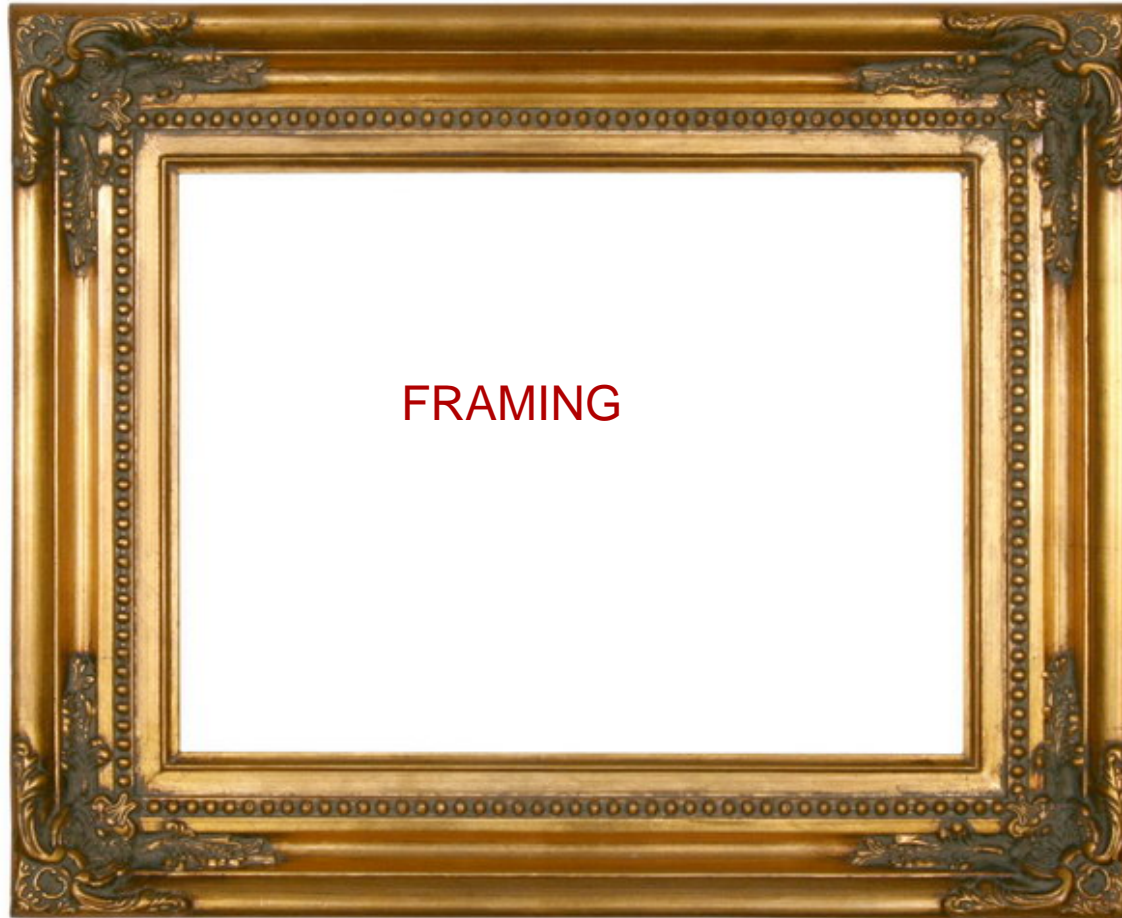
- **Confusion**
 - >50% agreed that “everything causes cancer”
 - 15% said “nothing could reduce a person’s risk of getting cancer”
 - 27% said “Not much people can do to lower their chances of getting cancer”
- **Inaccurate understanding of disease etiology**
 - Causal attributions to diseases and disparities are flawed
 - Lifestyle behavior was ranked one to explain poor health outcomes
- **Social Media and the Spiral of Amplification**

Message construction...

#4

How you say it is as important as **what**
you say

- **Certain features of messages**
 - Format, structure and construction
 - Interact with individual attributes of the audience
 - Influence information processing
 - Changes in knowledge, attitudes and behaviors



FRAMING

Is this story giving the full picture?

Biggest Loser sets her sights on changing Lawrence

By Jill Harmacinski

LAWRENCE — Wearing a fitted green sweater dress with high black boots, Elizabeth Ruiz flashes a megawatt smile. Everybody's telling her she looks great.

But even better, "I feel awesome," said Ruiz, who dropped nearly a third of her weight as a "Biggest Loser" contestant.

Now armed with a lighter, fitter body and newfound healthy lifestyle, Ruiz is turning her focus to her hometown. While studying to become a certified personal trainer, her dual mission is to reduce sky-high obesity rates for Lawrence's men, women and children. It's something she talked about during the "Biggest Loser" competition and she wants to make good on the promise.



But we aren't getting the full picture.



Source: Eagle-Tribune, January 12, 2011

VISWANATH LAB

School of Public Health

DANA-FARBER
CANCER INSTITUTE

Framing: Losing a winnable battle

When did
Big Apple
become
Big Brother?



Framing: Losing a winnable battle

BLOOMBERG'S SODA BAN PROHIBITS 2-LITER BOTTLES WITH YOUR PIZZA

Mayor Poppins' rules



Mayor Bloomberg's nannyish ban on large drinks goes into effect March 12. Any restaurant or shop that receives a Health Department letter grade will face a \$200 fine if it sells a sugary beverage larger than 16 ounces. Among the new rules' casualties:



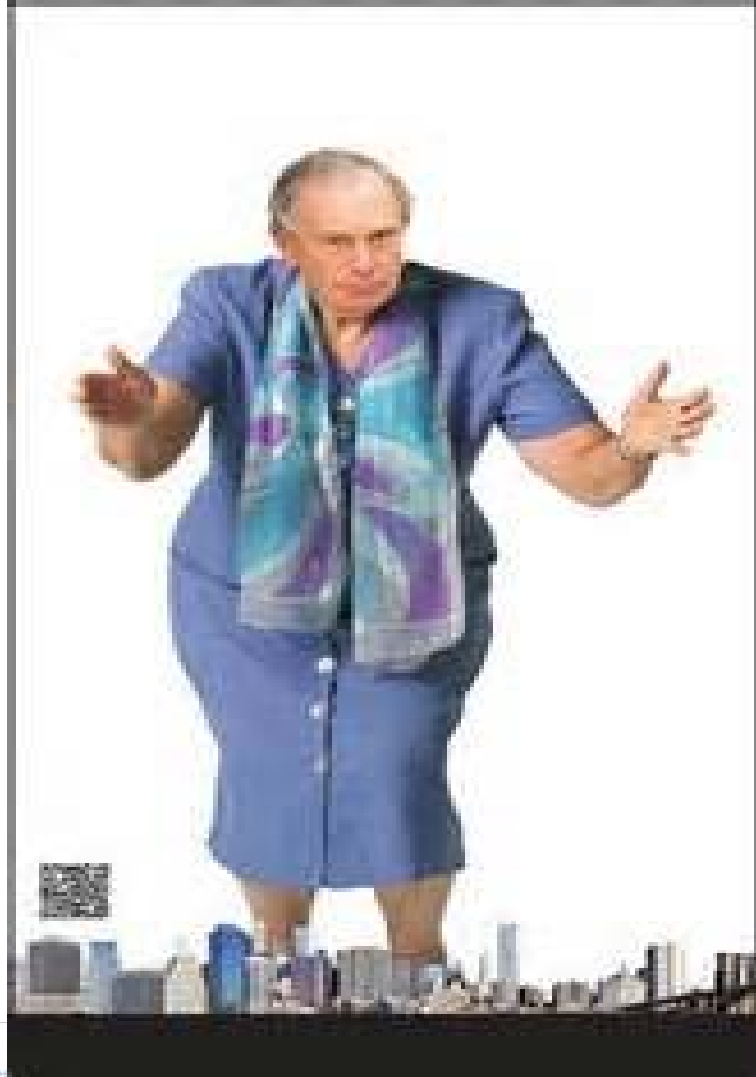
What's wrong with this pitcher?

If you're out eating with your family, you cannot order soft drinks in a pitcher. Even at children's birthday parties in family-friendly eateries like Chuck E. Cheese's, you'll be forced to buy individual cups of soda.

FB.COM/CAPITALISTS

Post photo composite

Framing: Losing a winnable battle



NANNY STATE SUFFERS A BLOW IN NEW YORK: COURT OVERTURNS SODA BAN

Mayor Michael Bloomberg
exceeded his authority

#5

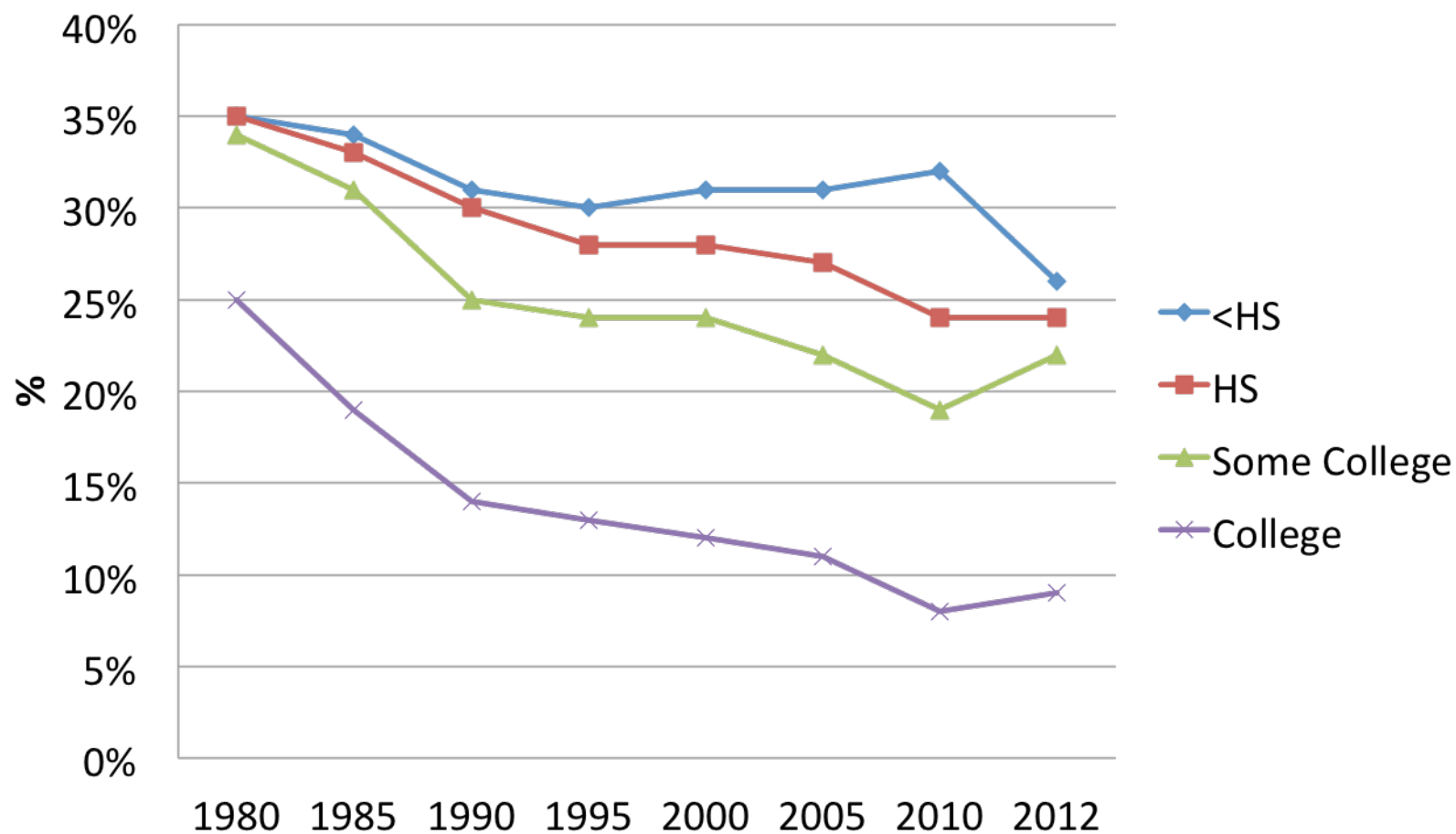
Health & Communication Inequalities



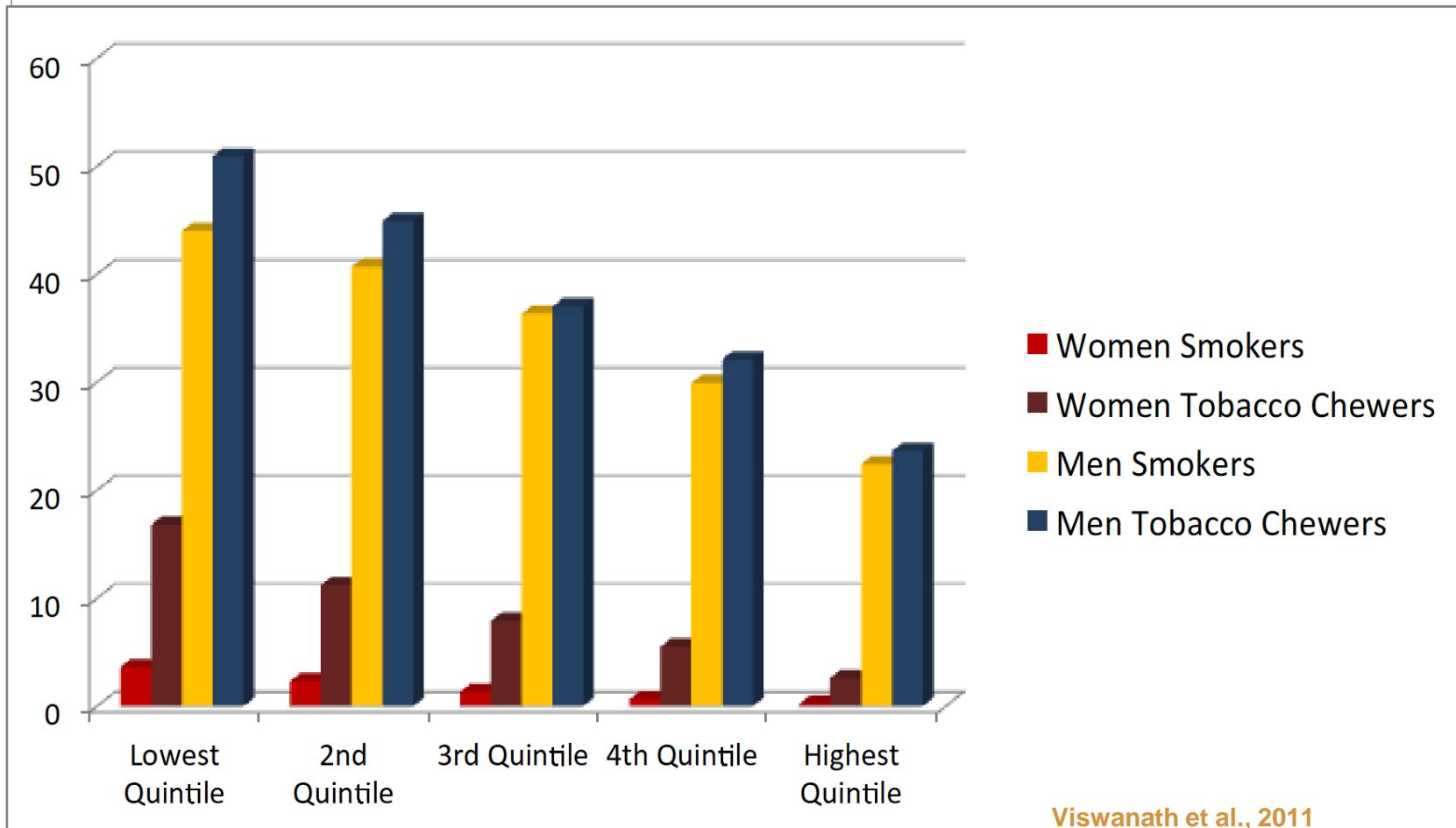
Health Inequalities

- Health, like wealth, is unequal
 - People from higher SEP, Whites, and those living in wealthy neighborhoods are healthier
 - Mortality is distributed unequally racially
 - African-Americans have higher cancer mortality rates (compared to White people)
 - Hispanic women diagnosed with later-stage cancer, poorer survival rates (compared to White women)
 - Risk factors are unequally distributed
 - More prevalent among low SEP
 - Poverty has pernicious effect on wellbeing
 - Leads to isolation, disconnectedness, lack of access to health services, less access to telecommunication services, more unhealthy behaviors

US Cigarette Smoking Prevalence by Education, 1980-2012



Tobacco use by wealth in India



Communication Inequalities

- Communication inequalities manifest at multiple levels
 - Macro-Level: Differences in generation, processing and distribution of health information between different groups and institutions
 - Individual-Level: Differences in accessing, processing and using health information → precluding certain groups from taking advantage of the information revolution

Social Determinants and Science Communication

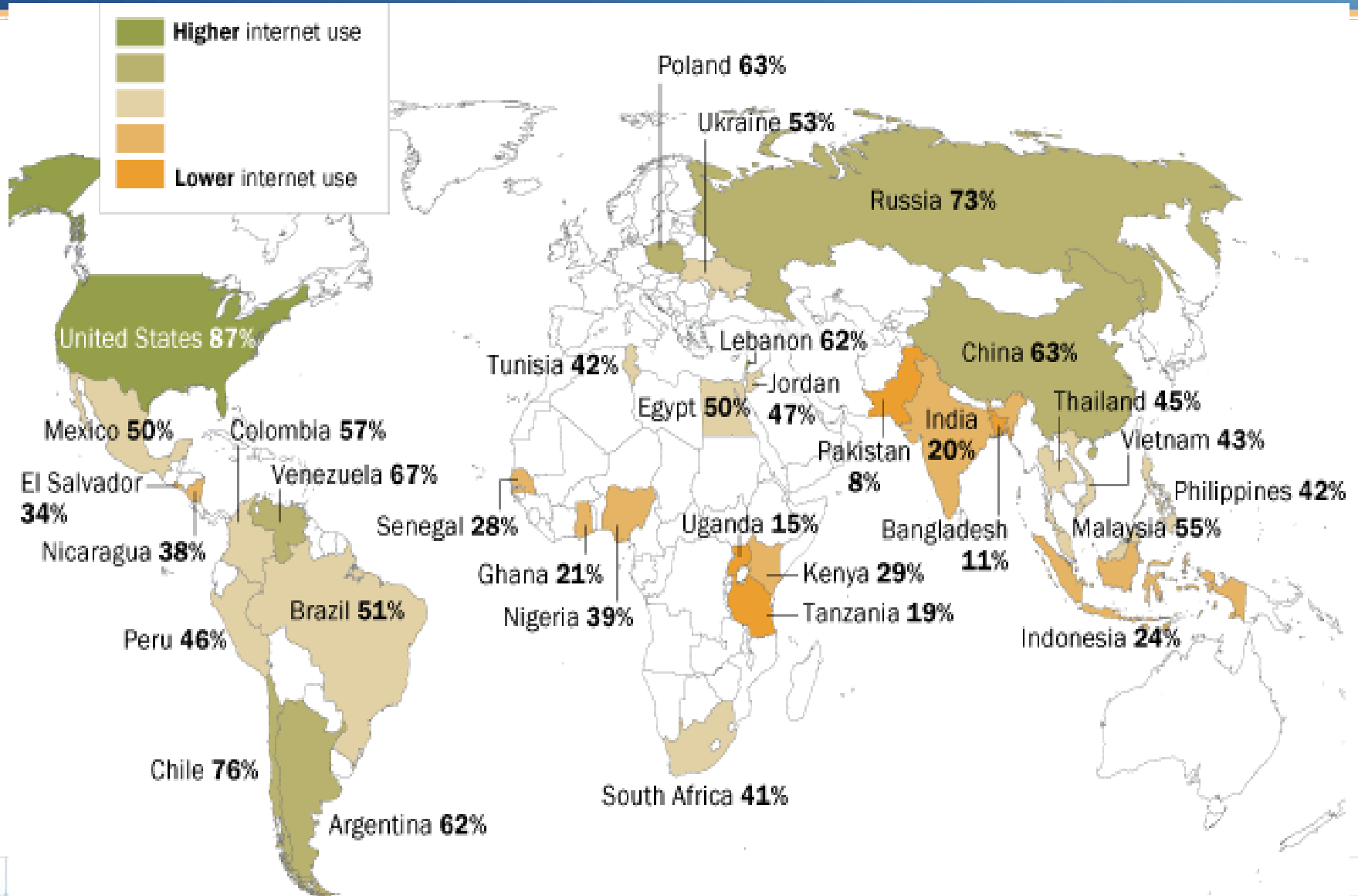
- Class matters
- Race (& ethnicity) matters
- Place matters

Project IMPACT Demographic Comparison to National Studies

	Project IMPACT	US Census 2010	Hints 2007	PEW Internet 2011
Total n	972	308,745, 538	7,674	7,235
Income				
Less than \$10,000	32%	8%	31% < \$35K	9%
\$10,000 to \$29,999	26%	18%		23%
\$30,000-\$49,999	21%	25%	13% \$35-\$50K	17%
\$50,000-\$74,999		18%		17%
\$75,000+	5%	32%	29%	15%
Education				
Less than HS	32%	8%	9%	13%
HS Degree/GED	33%	50%	25%	32%
Some College	20%	21%	30%	24%
Bachelor's +	15%	28%	36%	28%

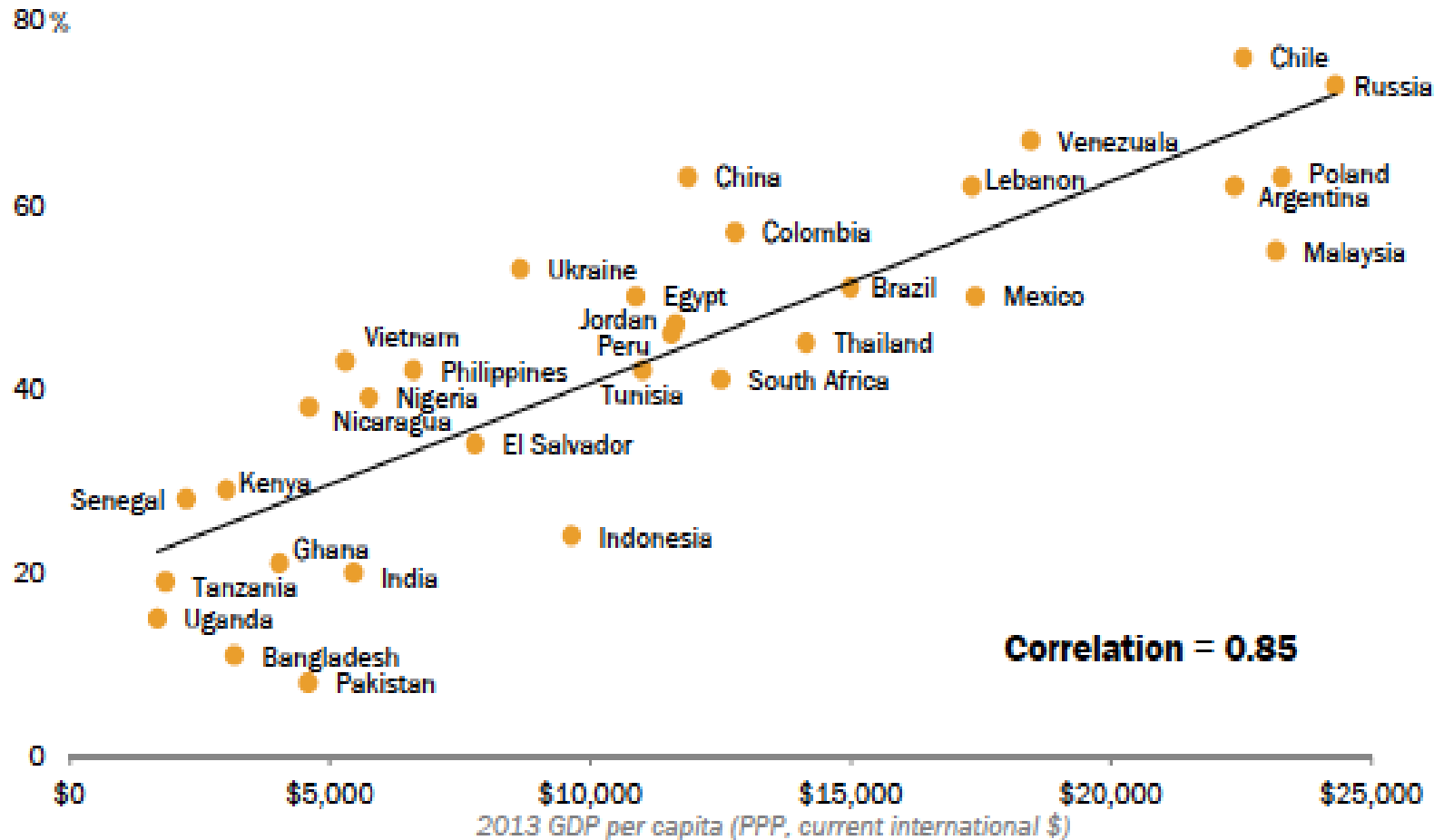
Project CLEAR Demographic Comparison to National Studies

	Project CLEAR	US Census 2010	Hints 2014	PEW Internet 2013
Total n	1,102	308,745, 538	7,674	7,235
Income				
Less than \$10,000	20%	8%	31% < \$35K	9%
\$10,000 to \$29,999	27%	18%		23%
\$30,000-\$49,999	15%	25%	13% \$35-\$50K	17%
\$50,000-\$74,999	9%	18%	17%	11%
\$75,000+	6%	32%	29%	15%
Education				
Less than HS	17%	8%	9%	13%
HS Degree/GED	39%	50%	25%	32%
Some College	27%	21%	30%	24%
Bachelor's +	17%	28%	36%	28%



Internet Access Strongly Related to Per Capita Income

Adults who use the internet at least occasionally or own a smartphone



Source: Spring 2014 Global Attitudes survey. Q87 & Q89. Data for GDP per capita (PPP) from IMF World Economic Outlook, October 2014.

Intersectionality

Among the college educated, whites score higher than blacks and Hispanics on science knowledge

Mean number of correct answers out of 11

Among those with a college degree or more



Among those with some college education or less



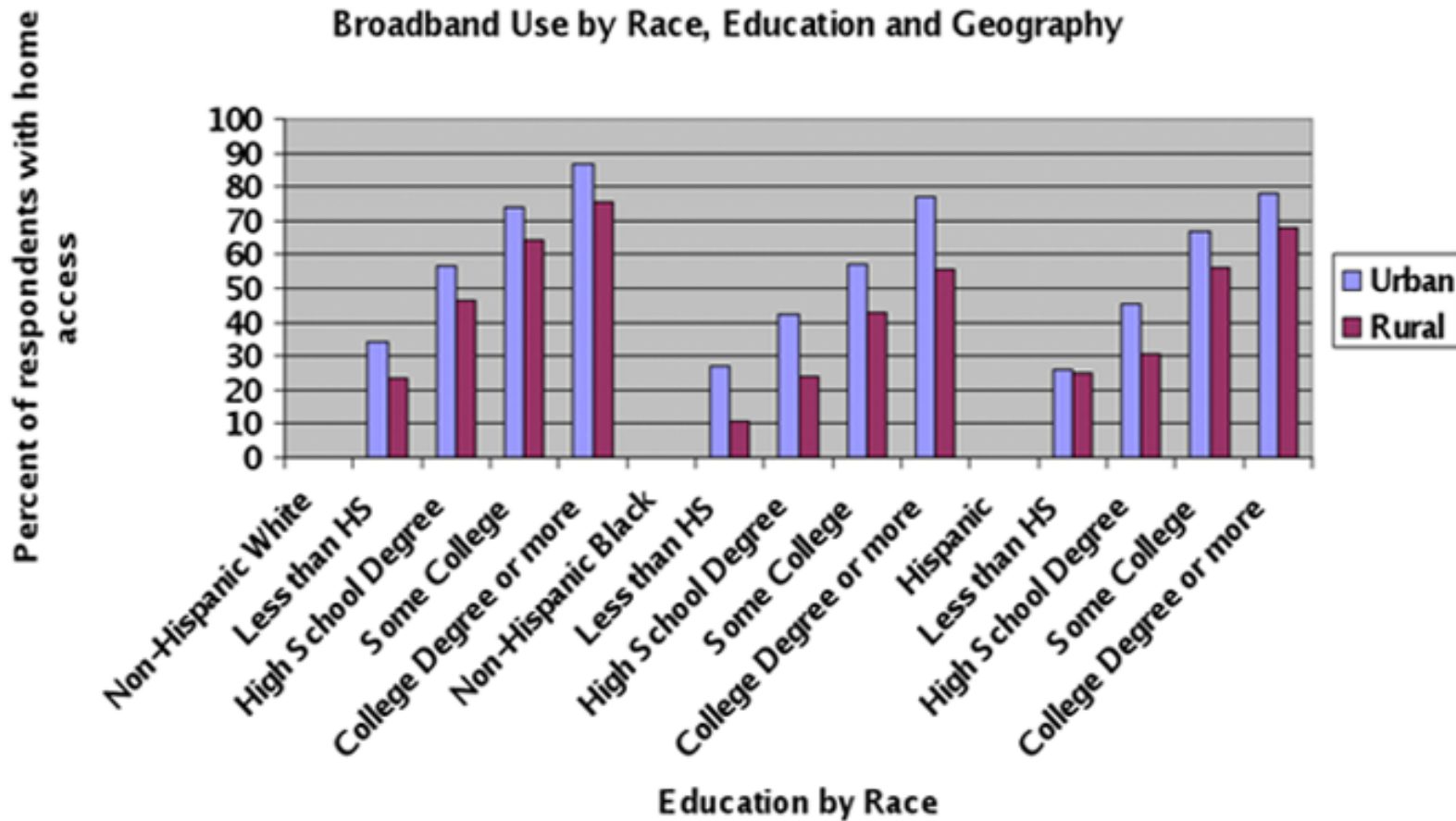
Notes: Whites and blacks include only non-Hispanics. Hispanics are of any race. All questions are multiple choice; for full question wording, see topline.

Source: Survey conducted Jan. 7-21, 2019.

“What Americans Know About Science”

PEW RESEARCH CENTER

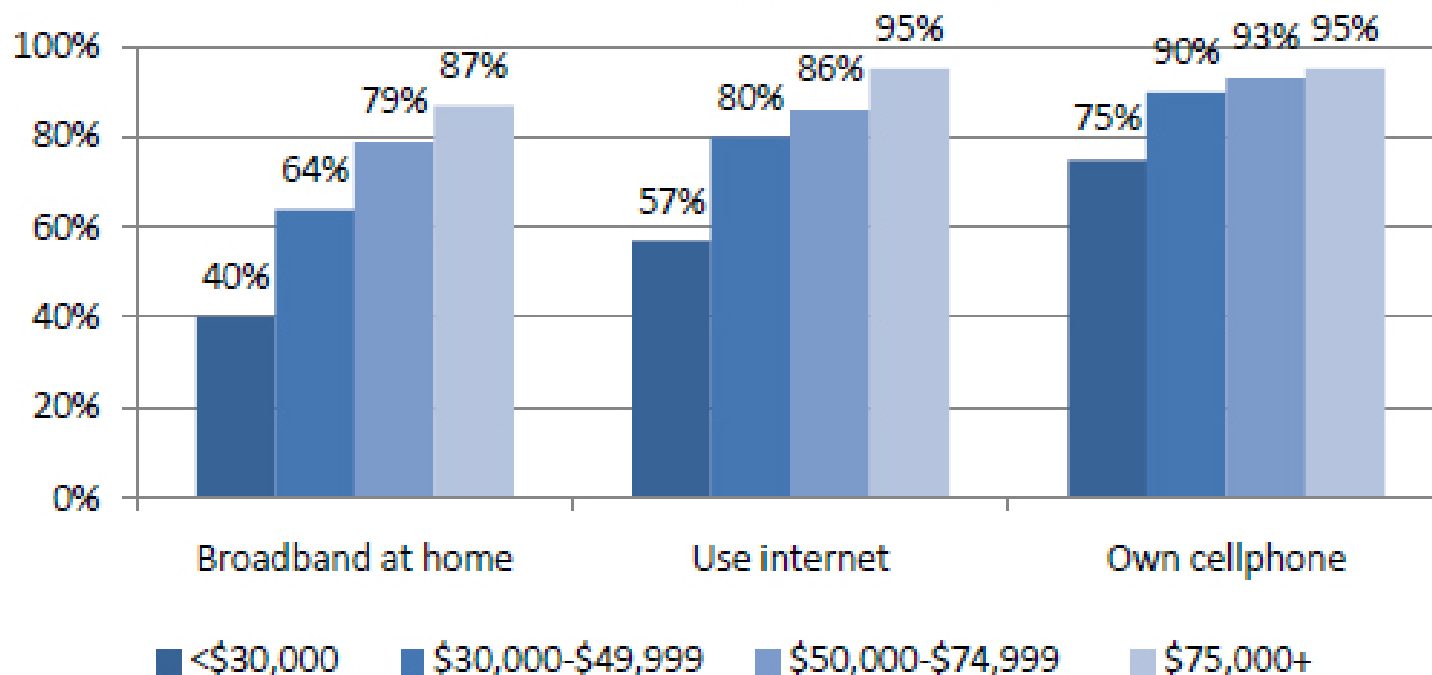
Broadband use: Exemplar of Intersectionality



NTIA, 2010

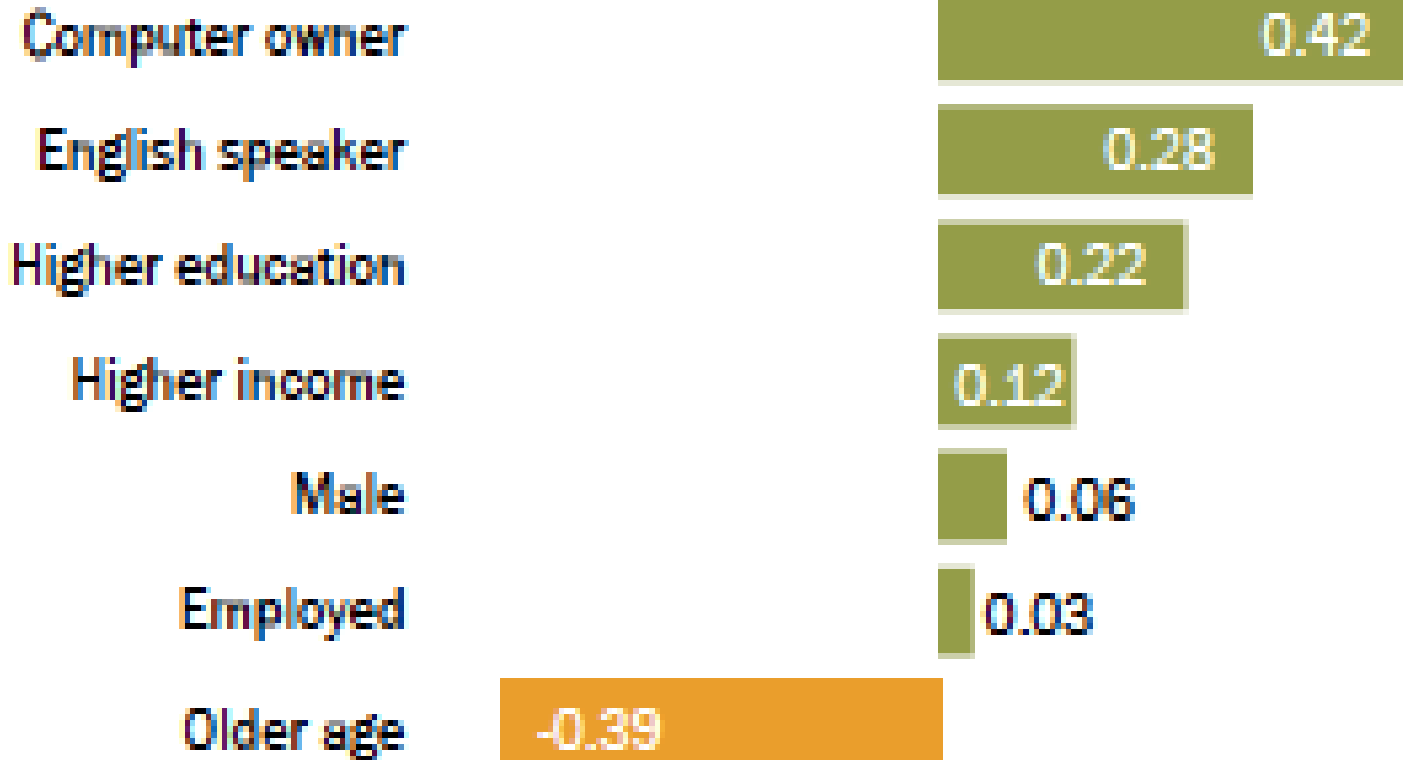
Disparities by Income Level

Figure 1. Comparison of broadband access at home, cell phone ownership, and internet usage by income brackets of general population



Source: Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults and the margin of error is +/- 2.5 percentage points.

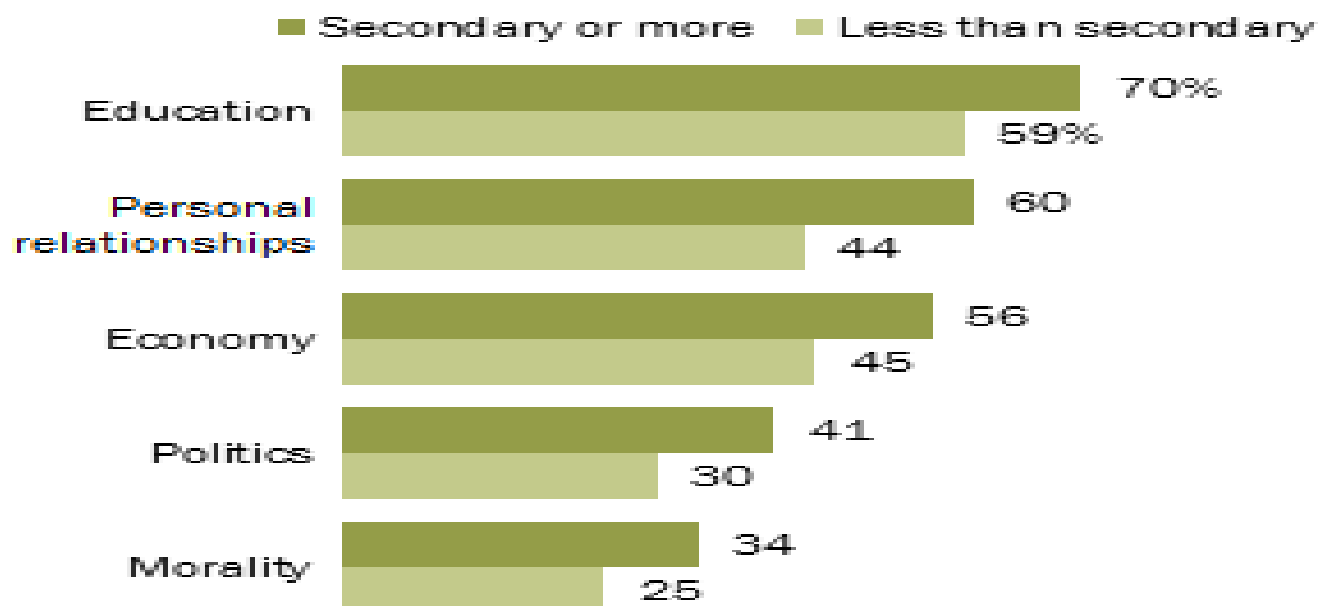
Who uses the Internet....



Note: The number shown is the difference in predicted probability of internet usage between selected groups for each variable. For example, the predicted probability that someone will use the internet

Highly Educated More Likely to See Positive Influence of Internet

Increasing use of the internet has had a good influence on ...



Note: Median percentages across 29 emerging and developing nations. Russia, Ukraine and Tanzania excluded due to insufficient sample size.

Source: Spring 2014 Global Attitudes survey. Q75a-e.

PEW RESEARCH CENTER

The Economist

FEBRUARY 28TH - MARCH 6TH 2015

Economist.com

Brazil's economic quagmire

The price of pandering to pensioners

America's oversold manufacturing boom

The theology of jihad

Mosquito sex and malaria

Planet of the phones

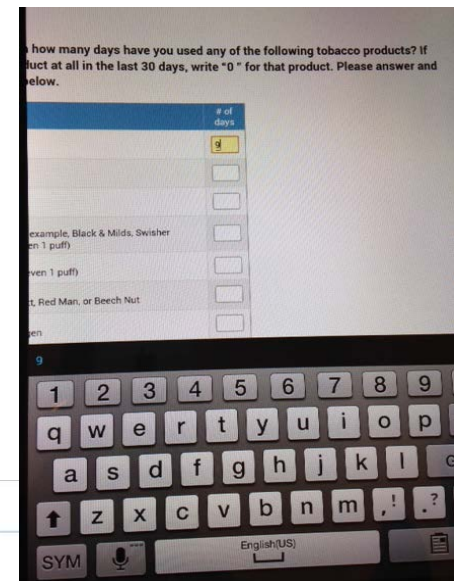
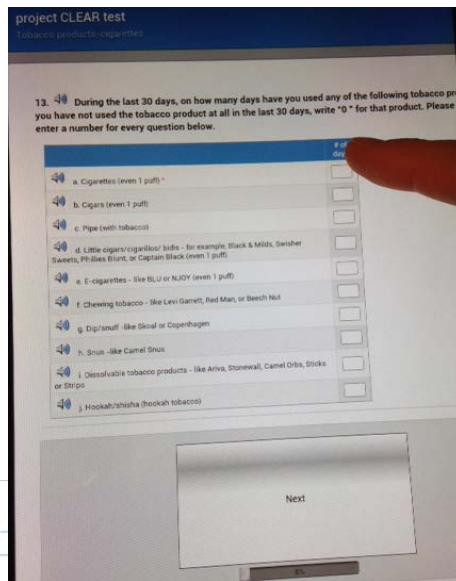
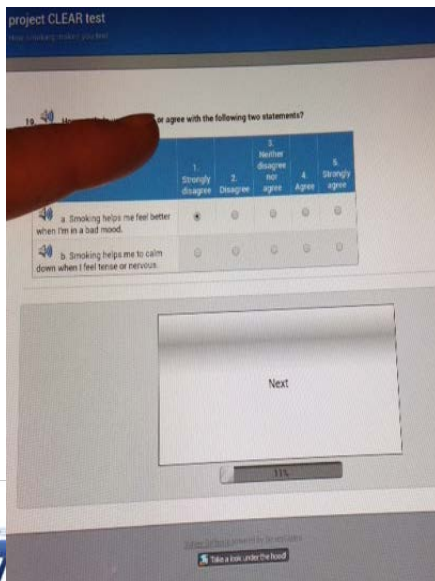


By 2020
80% of adults will
have a supercomputer
in their pocket

- **Experiencing a change of phone number was associated**
 - Lower income
 - Lower education
 - African/African-American
- **Gaps in use were significantly associated**
 - Younger
 - Hispanic
 - Having a government phone plan

Lessons Learned: Notes from the Field

- **Common issues on tablets**
 - Discomfort with new technology
 - Trouble tapping finger in circle to select answer
 - Trouble tapping inside response boxes to bring up keyboard for data entry
 - Confusion about scrolling down page with finger
 - Difficulty seeing screen



Communication Inequalities

Documented barriers in....

- Information seeking
- Avoidance
- Knowledge
- Misplaced beliefs
- Even...association with mortality...

Communication Inequalities

- Access is Not Enough
- SES Determines How Health Information is **Used**
 - Lack of resources
 - Living in poor neighborhoods
 - Poor access to services
 - Poor air quality
 - Unsafe living conditions

Information processing

- **Mindset of resource scarcity**
 - Differential allocation of attention
 - Pressing demands and juggling
 - Cognitive overload?

Shah, AK., Mullainathan S., Shafir E. Some Consequences of Having Too Little. Science 338, 682 (2012).

Concluding remarks

- We need institutional solutions to address the challenges
- Inequalities are not natural
 - We need to design systems and the symbolic environment that do not exacerbate inequities
- ICTs are outpacing our ability to regulate. What can we do about it?

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www.viswanathlab.org