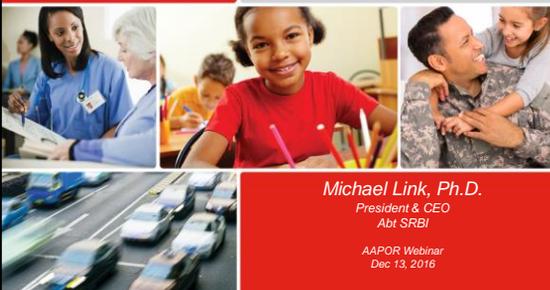




Smart Phones, Smart Questionnaires? Challenges of Mobile Surveys



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AAPOR Webinar
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- Focus on:
 - Use of new technologies for data capture
 - Continued evolution of survey research
 - Integrating data science & Big Data with traditional methodologies
- Addicted to:
 - iPhone
 - Social Media
 - International Cooking



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Lunga Vita alla Rivoluzione!!



Field of Data Capture is Quickly & Continuously Evolving

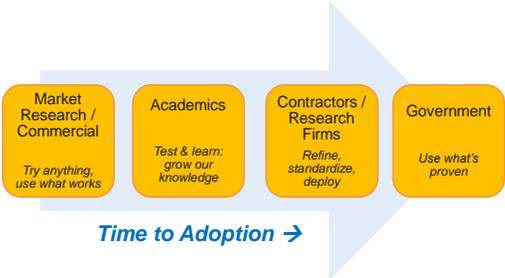
- Technology changes not just how researchers can measure phenomena, but changes context in which respondents exist
 - Increasing familiarity with technology (particularly mobile) builds expectations for technology use by respondents
- Pace of change is exponential – we have never been in an era like this before
 - No stable methodological era on the horizon
- Imperfect conditions should not delay research & development
 - Coverage, sampling, participation problems – yes!
 - Tremendous amount can and should be learned now!

Mobile data capture is still in relative infancy:
 Need to build both empirical/scientific understanding as well as practical best practices around these new technologies

Mobile Devices – Technology in Constant Flux

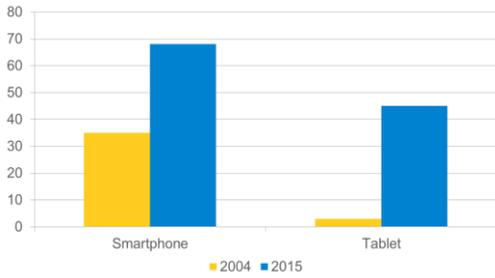
- Mobile devices – feature phones, smartphone, tablets & everything in between
- Smartphones & Tablets increasingly similar, but differ on:
 - Screen size: smaller to larger
 - Connectivity: cellular, Wi-Fi, or both
 - Location: everywhere vs home or special purpose
 - "Ownership": personal vs shared
 - Usage: short, frequent bursts vs longer, sustained
- End result – while both are "mobile devices," the who, what, where, when, and why of usage can vary dramatically
 - This has major implications for use as data collection tools

A Quick Word About ... (Somewhat) Typical New Tech Adoption Cycle



1. Changing Mobile Respondent Landscape

Growth of Mobile Device Ownership Among Adults 18+



Source: Monica Anderson, "Technology Device Ownership: 2015," Pew Research Center, October 2015. Available at: <http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015>

% U.S. Adults Who Own a Smartphone (2015)

Characteristic	%	Characteristic	%
U.S. Adults	68	Community Type	
Age		Urban	72
18-29	86	Suburban	70
30-49	83	Rural	52
50-64	58	Race/Ethnicity	
65+	30	Hispanic	64
Education		Black	68
< High School	41	White	66
High School	56	Sex	
Some College	75	Men	70
College +	81	Women	66

* Smartphone = iPhone, Android, Blackberry or Windows phone
Source: Monica Anderson, "Technology Device Ownership: 2015," Pew Research Center, October 2015. Available at: <http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015>

% U.S. Adults Who Own a Tablet (2015)

Characteristic	%	Characteristic	%
U.S. Adults	45	Community Type	
Age		Urban	42
18-29	50	Suburban	50
30-49	57	Rural	37
50-64	37	Race/Ethnicity	
65+	32	Hispanic	35
Education		Black	38
< High School	19	White	47
High School	35	Sex	
Some College	49	Men	43
College +	62	Women	47

* Tablet = iPad, Samsung Galaxy Tab, Google Nexus or Kindle Fire
 Source: Monica Anderson, "Technology Device Ownership: 2015," Pew Research Center, October 2015.
 Available at: <http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015>

Implications

- Ownership, feature usage, & comfort level can vary dramatically across:
 - Demographics
 - Types of mobile devices (phones vs tablets); operating systems (iOS, Android, etc.); device size
- Critical design considerations:
 - General population studies –vs- specific populations (e.g., younger, tech-savvy)
 - Bring your own device (BYOD) –vs- Researcher providing a device
- Increasing feature familiarity opens to door to use of mobile devices as more than "telephones" or even web survey platforms
- But new approaches require somewhat different thinking and solid knowledge about the proper usage and potential pitfalls of each new method

2. Conducting Web Surveys on Smartphones: What Do We Know?

What is a "Mobile Web" Survey?

- Mobile Web Survey = survey conducted on a mobile device via the device's web browser
- Often (but not always) a secondary mode with primary mode considered to be PC/laptop administration
- Researchers report ~25-50+% of their "web" survey respondents are actually "mobile web" respondents – and often not by design!

If you are conducting Web Surveys, you are conducting Mobile Surveys!

Mobile Browsing May Be Popular, But ...

- Mobile web surveys as a mode may influence responses (potential for measurement error / mode effects):
 - smaller screen,
 - how information is displayed,
 - respondent navigation, etc.
- Multiple studies have shown:
 - **Higher break-offs** for phone vs tablet vs PC (Stapleton 2011; Buskirk & Andrus 2012; Wells, Bailey & Link 2012a, 2012b; Baker & Prewitt 2013)
 - **Longer administration times** for phone vs tablet vs PC (Mavletova 2013; de Bruijne & Wijnant 2014; McClain et al, 2012; Peterson 2012)
 - Scrolling may be main cause of longer times -- versus transmission issues or difficulties reading questions (Couper & Peterson 2015)

Every Web Survey needs a strategy for handling mobile respondents

How Do We Address Mobile Web Respondents?

- No changes to online survey
- Blocking mobile respondents
- "Mobile Friendly" approach
- "Mobile First" approach
- Mobile Survey App approach

Callegaro, 2010; Buskirk & Andrus 2012;

“Do Nothing” Approach

- Not making any changes to the survey originally designed for PC/laptop administration
- Benefits:
 - Normal online deployment (no additional formatting)
 - No additional costs
 - Increase reach of survey to mobile-only/mobile-mostly
- Disadvantages:
 - Survey not viewable without additional effort (pinching, scrolling, zooming)
 - Higher drop-off rates due to increased burden
 - Unformatted images take up disproportionate space
 - Very high potential for measurement / data entry error



Adopted from: Buskirk & Andrus, 2012

“Blocking” Mobile Respondents

- Redirecting or blocking persons using a mobile-based browser from entering survey site
- Benefits
 - Does not require specific mobile version of survey
 - Relatively easy and inexpensive to implement
- Disadvantages:
 - Increase nonresponse
 - One study found that 80% of panelists who encountered a re-direct did NOT completed the survey [Buskirk & Andrus, 2012]
 - Can lead to differential non-response as younger adults more likely to try to access via mobile

User Agent Strings:
Meta-data providing researcher with information on the type of device and browser used to access a Web site (see Callegaro, 2010)



“Mobile Friendly” (aka “Optimized”) Approach

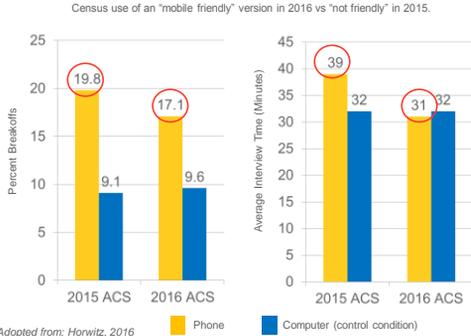
- Start with PC/Laptop version and make modifications to layout & display as necessary for mobile administration (“graceful degradation”)
- Benefits:
 - Readable text (without pinching & zooming)
 - Graphics and images are in proper proportion
 - Horizontal scrolling reduced
 - Number of questions per page can be controlled
- Disadvantages:
 - Higher development costs (additional testing across multiple versions)
 - Operating systems may still format page or questions differently
 - Doesn’t necessarily address all mobile user issues

Most Web Survey packages now offer a “mobile friendly” or “mobile optimized” conversion , including:

- ✓ ConfirmIT
- ✓ Qualtrics
- ✓ Voxco Acuity4 Survey
- ✓ Instant Census
- ✓ REDCap
- ✓ Survey Monkey
- ✓ Fluidsurveys
- ✓ Typeform
- ✓ Twitter Bootstrap

Adopted from: Buskirk & Andrus, 2012

Example: Use of "Mobile Friendly" Approach



"Mobile First" Approach

- Make initial design decisions for the mobile platform, then add features if desired for PC/Laptop versions
 - Shorter questions (reduce verbiage overall)
 - Vertical response options
 - Font size & spacing to facilitate touch screen responses (minimize "Fat Finger Folly")
 - Design aspects people need to touch first ("next" buttons, radio buttons, check boxes), then text (reverse of what we normally do)
 - Make text boxes as large as possible (given the question goals)
 - Reduce the temptation to use all the "bells & whistles" a phone can support (wheels, slide bars, etc.)
 - Limited use (or elimination) of graphics / logos / etc.
- Benefits
 - Maximizes the "mobile friendly" benefits
 - In step with trend of mobile becoming the dominant way of accessing web content
- Drawbacks:
 - Different thought process: More dramatic changes in existing questionnaires; new limits on new questionnaires (more "stripped down")
 - Same issues as "user friendly"

Mobile Survey App Approach

- Application (app)-based solutions: relies on smartphone operating specific application to push and upload content
 - Ex. Confrimmit SODA (Survey on Demand App)
- Benefits:
 - Question layout self-contained without need for horizontal scrolling or zooming
 - Orientation (landscape/portrait) of survey controlled
 - Reliably use video/flash/image/audio content
 - Automates data uploads and respondent alerts
 - Does not need persistent internet connection
- Disadvantages:
 - Can require multiple versions across operating systems
 - Respondent must download & install app (for BYOD)
 - Cost can be high - especially for single survey
 - Some question types may not be available in App toolkits (require additional programming)

Adopted from: Buskirk & Andrus, 2012

Accessibility Issues

- Accessibility guidelines require any Federal IT product, including web surveys, to provide equivalent access to blind / low vision individuals as for sighted persons for survey instructions and questionnaires
- Desktop applications follow Section 508 guidelines, however, mobile applications follow the World Wide Web Consortium (W3C) guidelines
- WC# Best Practices: <https://www.w3.org/TR/mobile-bp/>
- Testing of mobile surveys often conducted using Google TalkBack or Apple VoiceOver, following W3C rules

Adopted from Malakhoff 2016

3. Moving Towards Best Practices in Mobile Web Survey Designs

Design Suggestions

- The design suggestions presented here are recommendations meant as guidance not "standards" per se.
- Many based on the current technical and screen characteristics (i.e. size) of mobile devices – aspects likely to change over time.
- Small (but growing) number of empirically based studies that support and validate some of these design suggestions
 - Many from shared knowledge among practitioners
- Please experiment and report your findings on how to effectively conduct surveys for smartphones!

**Mobile Survey Recommendation #1
Match Tools to Task & Respondents**

- Select an approach that is best suited to:
 - Capture the data needed;
 - Fit with respondents' skills / ability to respond
 - Optimize presentation of survey content
- Various potential uses of smartphones:
 - Voice / CATI mode
 - Short Message System (SMS) – text
 - Invitations, flash polls
 - Online surveys accessed via mobile browser
 - App-based data collection

Is the Smartphone a good survey or data collection tool for your population of interest?

**Mobile Survey Recommendation #2
Survey Invitation**

- SMS or Email Invitations and Web Addresses for Smartphone Surveys should be as simple and straightforward as possible.
- Minimize the number of "special characters" in the survey web address (for those who may need to type the address into another device browser)
- Place the key information (e.g. survey sponsor, incentive...) at the beginning of the email subject.
- Place the survey link as soon as you can in the email invitation, to avoid scrolling.

**Mobile Survey Recommendation #3
Survey Length**

- Smartphone surveys should be designed to be as short as possible (as if you didn't already know this!)
 - Reduce verbiage in questions – but need to balance shorter question length & clarity
- Dead spots still exist for Smartphones – how are data captured & transmitted?
 - Does respondent need to start over?
- Internet speeds vary also by area
- Smartphone users multitask – longer surveys could become increasingly problematic

Mobile Survey Recommendation #4 Survey Layout

- The overall survey layout should minimize need for:
 - scrolling (especially horizontally) to the extent possible.
 - pinching/zooming.
- Answer choice layout may create need for vertical scrolling on some devices
- Scrolling & small screen size
 - Respondents more likely to choose visible options when horizontal scales not fully shown & side to side scrolling required (Stapleton 2013)
 - Vertical scrolling makes completion process easier and helps engage respondents (Maveletova and Couper 2014)

Focus on: Vertical & Horizontal Scrolling

Required Vertical Scrolling

Required Horizontal Scrolling

More Responses →

Adopted from Peytchev & Hill, 2010)

Mobile Survey Recommendation #5 Response Option Formats

- Allow for adequate space between options.
- Selected responses should be clearly visible to the extent possible.
- Organizing response options vertically.
- Need to address the "Grid Issue" ...

Focus on: Question Grids

- Grids are popular in paper, web, & CAPI surveys:
 - Avoids repetition of base questions;
 - Effective use of screen space;
 - Speed up survey administration;
 - Avoid breakoffs
- Down-side of grids – potential for:
 - Greater measurement error
 - Speeding
 - Non-differentiation
 - Break-offs

Grids - Special Challenge for Mobile Web Surveys

- Small screen – lack of display space
- Breakoffs in grids significantly higher on phone web surveys than PC surveys (Wang, McCutcheon, & Allen 2015)
- Measurement error is greater in longer than shorter grids (Stern et al 2015)
- Two basic ways to handle (Thomas et al, 2015):
 - simplify grid presentation to reduce the screen space required
 - Make grids "mobile friendly" by reducing number of response categories

Potential Types of Grids: Traditional

- Row & column matrix

Has a doctor, nurse, or other health professional EVER told you that you had any of the following?
 Select one answer from each row in the grid

	Yes	No	Don't Know
... a heart attack or myocardial infarction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... angina or coronary heart disease ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... a stroke?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... asthma?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... rheumatoid arthritis, gout, lupus, or fibromyalgia?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... skin cancer ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... any other form of cancer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Adapted from Thomas et al, 2015

Potential Types of Grids: Banked/Stacked Item

- Items with the responses presented horizontally under each element

Has a doctor, nurse, or other health professional EVER told you that you had any of the following?
Select one answer from each row in the grid

... a heart attack or myocardial infarction?		
Yes	No	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... angina or coronary heart disease?		
Yes	No	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... a stroke?		
Yes	No	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Adapted from Thomas et al, 2015

Potential Types of Grids: Responses on Right

- Elements presented along the left rows and response options presented vertically on the right

Has a doctor, nurse, or other health professional EVER told you that you had any of the following?

Select one answer from the right column for each option on the left column

... a heart attack or myocardial infarction?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't Know
... angina or coronary heart disease?	
... a stroke?	
... asthma?	
... rheumatoid arthritis, gout, lupus, or fibromyalgia?	
... skin cancer?	
... any other form of cancer?	

Adapted from Thomas et al, 2015

Potential Types of Grids: Focal Element

- One element presented at a time with the responses presented underneath

Has a doctor, nurse, or other health professional EVER told you that you had any of the following?

Please Click on the Orange Arrow to move up or down the list

... a heart attack or myocardial infarction?

Yes No Don't Know

... angina or coronary heart disease?

... a stroke?

... asthma?

... rheumatoid arthritis, gout, lupus, or fibromyalgia?

... skin cancer?

... any other form of cancer?

Adapted from Thomas et al, 2015

Implications

- No set agreed-upon way to display grids, but ...
 - Eliminate or significantly reduce horizontal scrolling
 - Banked / stacked approach seems the most popular
 - Can increase speed of interview without changing data quality (Thomas et al 2015)

Mobile Survey Recommendation #6 Navigation & Progress

- Limited screen landscape requires compromise and judgment when using logos, progress bars, disclaimers and help links in mobile surveys.
- Consider using abbreviated progress bars
- Placement of next and back buttons should be fixed in location toward the top of the screen
- Disclaimers should be placed on the welcome page.
- Slider bars, sum tallies and drag and drop sorters may not work on all devices.

Mobile Survey Recommendation #7 Flash, Video, Audio, Images

- Resolution of graphic images should be reduced in proportion to expected screen resolutions of mobile devices
- Flash content should be limited if iPhone Users are part of sampling frame.
- Video files should be embedded via link to YouTube or like "player" Can't rely on Quicktime, Windows Media Player, etc.
- Consider the size of the audio, image and video file sizes as they relate to bandwidth implications.

Mobile Survey Recommendation #8 Para Data Collection

- Plan to collect paradata from mobile sample including device type, size, and browser size
 - Data critical to driving many of the recommendations that follow re formatting
 - Need to analyze data on backend by these characteristics as there will likely be differences
- User Agent Strings: Meta-data providing researcher with information on the type of device and browser used to access a Web site (see Callegaro, 2010)
- User agent strings look like this:
 - Mozilla/5.0 (Macintosh; U; Intel Mac OS X 10_6_4; en-US) AppleWebKit/534.7 (KHTML, like Gecko) Chrome/7.0.517.41 Safari/534.7
 - Mozilla/5.0 (iPhone; U; CPU iPhone OS 3_1_2 like Mac OS X; en-us) AppleWebKit/528.18 (KHTML, like Gecko) Version/4.0 Mobile/7D11 Safari/528.16

Mobile Survey Recommendation #9 Pre-Testing

- There is a great deal of functionality that is consistent across mobile smartphones- but there is enough inconsistency to require extensive pre-testing of your mobile survey across multiple platforms.
- Consider using smartphone emulators to pretest the mobile version of your survey.
 - Ex. "SurveyTester" by Channel Group – can test multiple mobile platform variations at once

Mobile Survey Recommendation #10 Be Aware of Change, Change, Change

- The "Open-Ended Text" Parable:
 - ✓ Initial research cast doubt on ability to collect good, open-ended responses via mobile surveys (Peytchev & Hill, 2010)
 - ✓ But later studies found ...
 - iPhone users willing to provide short open-ended responses (Buskirk et al 2011)
 - Short open-ended not a problem (Wells, Bailey & Link, 2012a)
 - Larger box leads to more characters entered in response (Wells, Bailey & Link, 2012a)

Shelf-Life of many studies in
Mobile (and Other New Tech) is
very short these days ...

4. SMS / Text
&
“Experience Sampling” / “In the Moment” Designs

Texting / SMS

- Short Message Service (SMS/“texting”) is the most widely used mobile data service in the world
 - Today it is universally available on mobile phones
 - Provides a “common denominator” across makes & models of cellphones (doesn’t require advance device) & tablets
 - Extremely familiar technology, especially among younger respondents & use in less developed countries
- Potential Data Capture Uses:
 - Method of communicating with respondent:
 - Recruitment or reminder messages from researcher
 - Questions from respondents
 - Mode of delivering surveys or task requests
 - Provide link to online survey
 - Administer one question at a time surveys (beware survey length!)
 - Collect “in-the-moment” data via SMS
 - Reduce recall bias

Uses of SMS/Text in Survey Research

- Remind respondent to reply to a mail survey (Virtaken, Sirkia & Wurmele 2005)
 - Marginal impact in improving response
- Study in Russia reported that SMS was slightly more effective than email in encouraging survey completions (Marletova & Couper 2014)
- Studies of general population surveys find low response rates with SMS invites that direct to web surveys (Hoe & Grunwald 2015; Marlar & McGeeney 2013)
 - But can improve rates in other types of studies, particularly panels (Bruijne & Wijnant 2014; Bosnja et al 2008)
- Dept Labor study of younger adults & teens used text messages to increase response in cross-time study (Skaff, Stein, Hurwitz 2016)
 - 84% of study participants agreed to text messaging for contact
 - Improved response more among those 21+ years old vs those 18 or younger

Newer Uses of SMS/Text: In the Moment

- **"Experience Sampling"**: research methodology that asks participants to stop at certain times and make note of their experiences in real time
 - Often multiple observations over a period of time
- Ex. SMS Experience Sampling method used collect repeated measures of consumers' emotional experiences using mobile phones in everyday life (Kuntsche & Robert 2009)
 - Consumer insights difficult to capture with standard recall surveys
- Use SMS in a **"modular" design** – break survey into smaller sections and administer these pieces over time (West et al 2016)
 - Assumes responses won't change over a short period of time or context
- Used in less developed countries to track or report quick-breaking events (Lau 2016)
 - Ebola outbreak & spread
 - Nonresponse & coverage issues – best to get imperfect "read" of situation or identify "hot spots"

Schober et al (2015) SMS Experiment

	Voice	SMS Text
Human	Human voice (R speaks with I)	Human text (R texts with I)
Automated	Speech IVR (R speaks with system)	Automated Text (R texts with system)

- 634 iPhone users as respondents (~160 per mode)
 - Recruited via Craigslist, Facebook, Google Ads & Amazon Mechanical Turk
- 32 Qs from major US social surveys & methodological studies
- 10 interviewers from U Mich SRC – for voice & text
- Text messages sent via third party (Aerialink)
- R's answer with a single character: Y/N, letter (a/b/c) or number
- Key findings:
 - Less rounding of responses on text vs voice
 - Less straightlining on text vs voice
 - More socially undesirable responses on text vs voice
 - Interview length less in automated vs human
 - Overall AAPOR1 RR highest for human text:
 - Human text (72%), Human Voice (52%), Auto Text (49%), Auto Voice (39%)

SMS/Text Cautions

- Can be difficult to administer "traditional" survey questions as originally formatted, especially those with scales or other unique response formats
 - Even if formatting of question is possible, responses are still "unstructured" (i.e., open text field)
- Need to adhere to legal standards and operational protocols used in cell phone calling:
 - Telephone Consumer Protection Act (TCPA) / spamming laws – **Respondents MUST opt-in!!!**
 - Geographic and time zone issues
- Privacy implications: Does leave trail on respondents phone
 - Protocols needed to ensure respondent knows to delete message trail
- May result in differential reporting by age
 - Ubiquitous behavior among teen and young adults

5. Data Collection Smartphone Apps

Mobile Devices as Multi-Method Enablers

- Voice (CATI/IVR)
- Videochat
- Web access/surveys
- Text (SMS)
- Email
- Specialize applications
- Pictures & Video
- Audiorecording
- Scanning
- Blue Tooth-enabled



How can researchers use these new tools and how can we assess their utility & quality?

Data Collection Application

- Data capture apps using multiple features within a single user interface (versus a simple "survey app")
- Make use of multiple features
 - Possible to leverage array of ready-made tools
- Primary use (so far):
 - Longer-term panels (diaries, etc.)
 - Complex data collection w multiple tasks
 - Modular approach with "plug & play" tools could broaden utility
- Requires different development skill sets than those traditionally needed to develop a CAI instrument
 - Understanding of human-computer interactions & theories
 - Visual, form & flow elements

Series of Studies by Nielsen on App Use

Example studies	Purpose	Features
Life360 – Grab & Go [1,2,3,4]	Collect detailed consumer information regarding purchase of “quick consumables” such as snacks & soda	Survey to record purchase info; scan bar-code; take picture of item; GPS to track purchase location
Whatcha’ Watchin’? [5,6,7]	Record television and other video media usage over a period of time, in and out of the home	Survey to record viewing; tutorial; smart-lookup of program information; virtual badges; points & status; trigger surveys

[1] Scagnelli et al, 2012; [2] Bailey et al 2011; [3] Lai et al 2010; [4] Link & Bailey, 2011; [5] Lai, Link, & Vanno 2012; [6] Lai, Bristol & Link, 2012; [7] Link, Lai & Vanno, 2012

Research to Data on Data Capture Apps

- Published research scare to date:
 - Cost & Programming Time comparisons with other studies [1]
 - Types of respondents most likely to use (younger adults, tech savvy, minorities) [2]
 - Respondent engagement/ gamification techniques [3]
 - “Experience Sampling” to measure consumer purchase behavior over several weeks [4]
 - Comparison of Survey App vs Web-based surveys [5]
- Current state of the art:
 - Multi feature apps take considerably greater planning & time to develop
 - Apps download & installation adds another dimension to nonresponse
 - Tends to show lower rates of response compared to web-based surveys (some also show declines in participation over time)
- Positive trends:
 - Programming becoming more “mainstream” (faster, easier, cheaper)
 - Respondents are becoming increasingly use to using apps

[1] Lai, Link & Vanno, 2012; [2] Lai, Link, Bristol, & Duan, 2014; [3] Link, Lai, Bristol & Duan, 2013; [4] Scagnelli, Bailey, Link, Moskowska, & Benzra, 2014; [5] McGooney & Weisel, 2015.

Pew American Trends Panel (ATP) App –vs– Mobile Web Study

- ATP: probability-based, nationally representative panel of US adults (study conducted Oct 2014)
- Respondents with iPhone, Android or Blackberry assigned to mobile web survey or mobile app survey
- ConfirmIT software for web survey; ConfirmIT Survey on Demand Application (SODA) software to develop App
 - Survey app group needed to download the app to their phone
- Sent a series of 14 short surveys over 1 week period
 - survey focus: How & why people use their smartphones
- Text message invite sent (after authorization to send text, of course!)
 - needed to be completed in 2 hours

(McGooney & Weisel 2015)

Pew ATP Experiment Results:

Response Rate ¹

# Surveys completed	App Group	Web Group
1 or more	58%*	84%
10 or more	40%*	53%
All 14	9%*	15*

¹ Responded / Invited * p < .05

(McGeeney & Weisel 2015)

- Only 61% of those invited to download the App did so
 - Significant number called to say they had difficulty download & installing at some stage of that process
 - Similar issues reported in study by Link et al (2013)
- Significantly lower response among App users who downloaded and used the App
- Lower response by App group at every day & time interval over 1 week period
- Main demo differences in completion seen by age – higher completion among 18-29 by App; lower among 65+ by App

Implications

Just because we're all addicted to smartphone apps doesn't mean they make effective tools for collecting high quality data from most populations – yet ...

- Most effective platform for integrating different features: location, photos, scanning, surveys, contacting, engagement features, etc.
- Appears best for cross-time or more complex data collection efforts – not simple point-in-time surveys
- Need to be custom developed – takes time, new expertise, & can be costly
- App download by respondents add another stage to nonresponse
 - Can overcome by providing locked-down device – but adds cost, time, logistical issues, & respondent burden
- An area where we need to continue to develop expertise & effective use cases

Closing Thoughts

- Many traditional survey concerns apply to use of new smartphone measurement techniques: Coverage, Response, Measurement error, etc.
- If you're conducting a web survey, you're conducting a mobile survey!
- New techniques require learning curve – both for individual researchers & the industry; building a body of knowledge on these methods
- Are mobile devices as the primary survey device niche or specialized study tools?
- Differential access and usage implications – SES & Age considerations
- Recall reduction? Is "In-the-Moment" better?
- Survey questions vs new measurement tools: Which works best for the study need?
- Clearer best practices related to protecting privacy & data security with new methods

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