



LEVERAGING SMS FOR SURVEY RESEARCH

AAPOR WEBINAR | JUNE 20, 2019

Jenny Marlar, M.S., Gallup | **Matt Hoover, Ph.D., Gallup**
jenny_marlar@gallup.com | matt_hoover@gallup.com



Outline

- Overview of SMS and TCPA
- SMS through the lens of TSE
 - Coverage
 - How to leverage SMS for survey research
 - Data collection, communications and measurement issues
 - Nonresponse
- How to implement SMS

OVERVIEW

Overview of SMS

- SMS (short message service) text messages can be up to 160 characters in length.
 - Non-Latin languages take up more characters.
 - Longer messages can be sent, but if they are sent as one message, the carrier will decide how to break the messages into chunks. They may not arrive sequentially.
 - Messages can be sent from smartphones or feature (basic) phones.
 - Messages are generally part of data plans in the U.S., but in developing countries, fees may be associated with each message sent and received.
- MMS (multimedia message service) messages contain media like pictures and videos.
 - Be aware that these typically require a smartphone and data plan to be viewed.
- Phones with SMS/MMS capabilities open many options/modes of data collection (telephone, web, apps, passive data collection, SMS, etc.). This presentation focuses specifically on SMS.

The TCPA

- **The information contained in this presentation is not legal advice. Your own council should provide guidance. AAPOR also has helpful resources.**
- The TCPA unfortunately limits what we can do with SMS in the U.S.
 - “It shall be unlawful for any person within the United States, or any person outside the United States if the recipient is within the United States ... to make any call (other than a call made for emergency purposes or made with the prior express consent of the called party) using any automatic telephone dialing system or an artificial or prerecorded voice ... to any telephone number assigned to a paging service, cellular telephone service, specialized mobile radio service, or other radio common carrier service, or any service for which the called party is charged for the call.”¹
- Fines can range from \$500 to \$1500 per violation.

¹ See American Association for Public Opinion Research (2015).

TCPA (continued)

- Research is not exempt.
- Automated telephone dialing systems and express written consent are the two important parts to be aware of.
- Collect written or verbal consent.
- Keep good records of consent.
- Keep good documentation of call procedures and sample management.
- Need a way for people to opt-out of consent.
- Peer to peer (P2P) messaging may be a way around the autodialing restriction, however, with P2P it's not always obvious there is a person on the other end instead of automation.
- Be aware that laws and interpretation of the laws are changing. States may also begin to implement their own laws.²
- **The information in this presentation is not legal advice – seek guidance from your legal council.**

² See American Association for Public Opinion Research (2015).

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International Research and Laws

- Laws vary from country to country.
- Laws are rapidly changing.
- Check the laws of the country of interest before sending text messages.
- SMS platforms make the assumption that you have received the necessary permissions. Don't assume that the provider's willingness to send messages means you are in compliance.



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COVERAGE

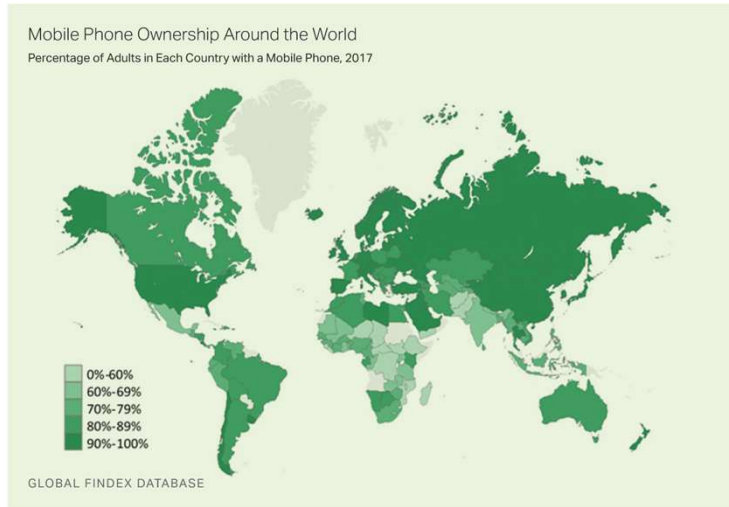
Mobile Phone/SMS Use in the U.S.

- The use of wireless devices continues to increase. The percent of cell-phone-only adults has risen from 35.8% in 2013 to 55.4% in 2018, and about 91% of households have a wireless phone.³
- 81% of adults own a smartphone, and texting is the most common smartphone activity. Almost all Americans with a mobile device send a text message at least once a day.⁴
- How individuals communicate and access the internet will continue to evolve.
 - Approximately 20% of adults primarily access the internet through their smartphone, up from 8% in 2013.⁴
 - Anecdotally, some Gallup Panel members are now reporting they can access the internet but do not have an email address. SMS is a way to reach these individuals for a web survey.

³ See Blumberg, S. J., & Luke, J. V. (2018).

⁴ Pew Research Center (2018).

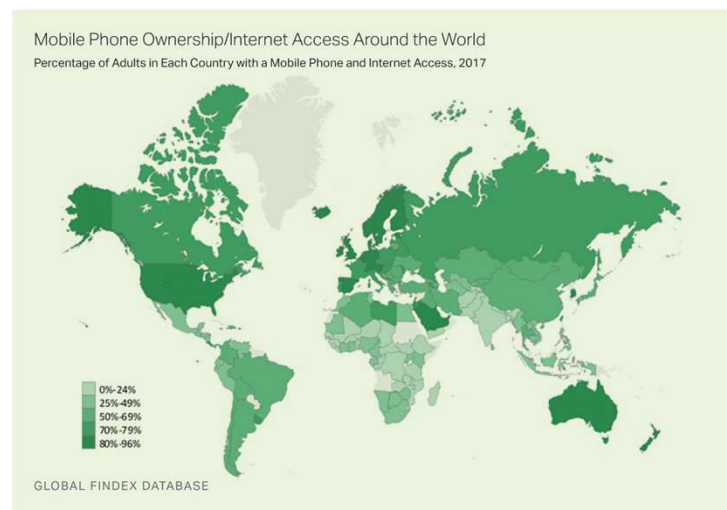
Mobile Phone Ownership - Internationally



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Mobile Phone Ownership + Internet Access

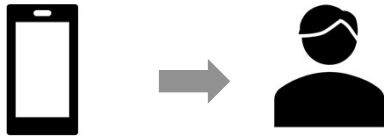


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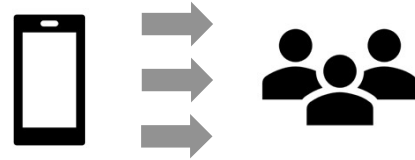
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Within Household Selection

- In developed countries, mobile devices are typically 1:1 devices – not shared by everyone in the household.



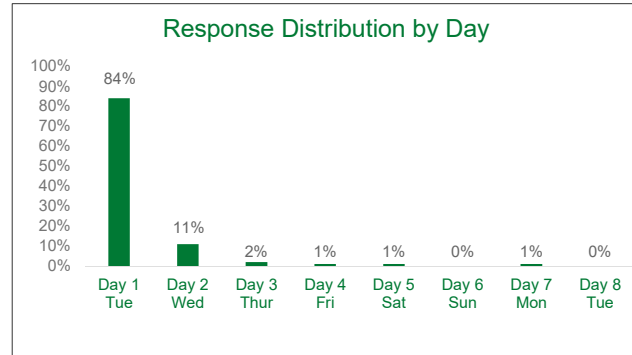
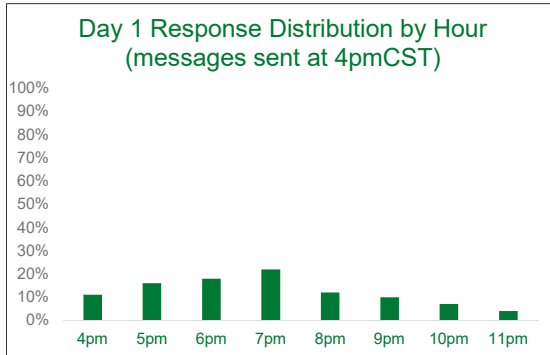
- In less developed countries, it is more common for mobile devices to be shared by several members of the family.



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Response Rate by Hour

- Studies conducted with SMS have consistently found that SMS can increase how quickly responses are received.⁵ From Marlar & McGeeney, 2014:



⁵ See Cooke, M., Nielsen, A., & Strong, C. (2013); Hoe, N. & Grunwald, H. (2015); Mavletova, A., & Couper, M.P. (2014).

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Examples of Studies/Populations

- Types of populations:
 - recruited sample that consents to participate — may need to have:
 - more than one point of contact to make it worthwhile
 - a special need for SMS (e.g., recruiting to participate in debate study on night of election)
 - experience sampling/momentary assessment
 - panels
 - longitudinal studies
 - employees who can't be easily covered using other modes
 - customers
 - internationally, there may be other options, depending on the country
- Be aware of possible safety issues (e.g., sending SMS survey to employees who are driving, etc.)

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How SMS Can Be Used

- Mixed-mode or as a stand-alone mode
- Prenotification
- Invitations or reminders
- SMS push to web
- SMS interviewing (Q&A via text message)
- Inbound SMS (Brassell, et al, 2019)
- Other uses may exist and should continue to be explored



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Mixed-Mode Communications

- Mixed-mode communications (prenotifications, invites, reminders) can take advantage of the visibility of SMS and help increase the chance that respondents find the invitation in their email or answer the phone. It may also help to legitimize the request.
- This is consistent with other literature which has shown multiple modes of contact can improve response rates.⁶
- Several experiments have found that SMS contact can be effectively used when used in combination with other methods or a pre-established relationship.⁷
- SMS as the sole means of contact tends to have relatively low response rates – at least in comparison with other possible mode choices.⁸

⁶ See Dillman, D., Smyth, J., & Christian, L. (2014).

⁷ See Bosnjak, et al. (2008); de Bruijne, M., & Wijnant, A. (2014); Maveletova, A., & Couper, M.P. (2014); Virtanen V., Sirkia, T., & Jokiranta, V. (2007); Marlar & McGeeney, 2014; Kanitkar & Marlar, 2016; Steeh, Buskirk and Callegaro, (2007).

⁸ See Bosnjak et al. (2008); Marlar & McGeeney, 2014; Hoe, N. & Grunwald, H. (2015);

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Examples

■ Prenotifications:

- Bosnjak et al. (2008) found a 51.3% response rate to a web survey when an SMS prenotification was sent versus a 40.1% when an email prenotification was sent.
- Holland et al. (2004) had similar findings. Service members had significantly higher response rates when sent an SMS prenotification to a web survey invite, as compared to no prenotification or a mail prenotification.

■ Reminders/Invitations:

- In a study conducted in Finland, respondents in a mail survey who received an SMS reminder had significantly higher response rates than those who receive a postcard reminder (Virtanen, Sirkia and Jokoranta (2007).

■ Reminders/Invites cont...

- Mavletova and Couper (2014) tested combinations of SMS and email invites/reminders and found the highest participation rate with Email invite/SMS reminder (60.9%) and the lowest rate with Email invite and reminder (44.1%). SMS invites and reminders had a participation rate of 53.2%.
- Dutch panel members who provided a mobile phone number were randomly assigned to receive an invitation via SMS or Email and found a 74% completion rate via SMS and 70% via Email. (de Bruijne and Wijnant, 2014)

■ Cold Text:

- Cold texts – at least based on very limited research thus far – appear to have lackluster response rates. Hoe and Grunwald (2015) tested in the Philadelphia area and had a response rate of 3.6%.

**COMMUNICATIONS, DATA
COLLECTION, AND
MEASUREMENT ISSUES**

Creating Compelling Messages With Limited Space

- Individuals may be more likely to see a text message than an email message.
 - Marketing text messages have an open rate of 98%, while marketing emails average a 22% open rate.⁹
- SMS, however, can feel very impersonal with no human on the other end of the request.
- Hoe and Grunewald (2015) did a non-response follow-up via phone interview and found 30% said they didn't participate because they "didn't know the source or reason" and 8% said they thought it was spam.
- Users need to take advantage of high visibility and create a compelling message that¹⁰:
 - establishes the "who, what and why"
 - builds trust in just 160 characters
 - compels recipients to respond

⁹ See Mobile Marketing Watch (2019); ¹⁰ Dillman, Smyth and Christian (2014)

SMS Push to Web

- Send a text message that contains a link to the web survey.
- Respondents click the link to launch the survey in their web browser.
- Respondents need a web-enabled device and will use data to respond.
- The vast majority of respondents will access from their smartphone, so be sure the survey is mobile optimized.¹¹
- If you have a long URL, you will need to shorten it to fit within character limitations (more on this later).

GALLUP invites you to take a short survey. Click link to begin <http://tinyurl.com/xxxxxx>
Reply HELP for help or STOP to cancel
Msg&DataRatesMayApply

¹¹ See Marlar & McGeeney (2014); Marvletova & Couper, (2014).

SMS Interviewing

- Respondents receive and respond to questions within the SMS interface.
- Question text-and-response options must fit within the character limitations.
- Answering one question triggers the sending of the next question.
- Notify respondent when they have completed all questions.
- Error messages and skip patterns can be programmed into the logic.

Invitation

GALLUP would like you to participate in a short survey. Reply START to start, HELP to help or STOP to cancel. Msg&DataRatesMayApply

Question Screen

GALLUP From 1 (not at all satisfied) to 5 (extremely satisfied) how satisfied were you with your most recent in-person bank visit? Use 6 for Don't Know/Use

Error

Sorry, that is not a valid entry. This is a permission based survey about banking from Gallup. To opt-out reply STOP. Reply HELP for help.

Completion

Your answer completes the survey. Thank you for participating in this Gallup survey! Your opinions do count!

SMS Interviewing — Question Wording

- Question and response options need to be very brief to fit character constraints and can limit how and what you ask.

Example:

PHONE AND WEB WORDING: *Using a five-point scale, where "5" means you are extremely satisfied and "1" means you are not at all satisfied, how satisfied are you with your most recent, in-person visit to a bank branch to talk with a teller or someone else? If you have not visited a bank branch, you may tell me that as well.*

SMS WORDING: *From 1 (not at all satisfied) to 5 (extremely satisfied) how satisfied are you with your most recent bank visit? Use 6 for don't know/use.*

SMS Interviewing – Numeric versus Text Response Options

- Answers can be numeric or text (single character response versus multicharacter response).
 - Did you watch any of the presidential debate tonight? 1=yes; 2=no*
 - Did you watch any of the presidential debate tonight? Yes or No*
- Be aware of the type of device that your population is most likely using and how it effects response entry¹².
- Although removing numbers from the response options can help reduce the character count, text entry may be difficult from feature phones.
 - In Tunisia, respondents were randomly assigned to a single character response or multicharacter response, respondents were more likely to select the shortest character response in the multicharacter condition.¹³



¹² See Conrad et al. 2017 ¹³ See Schober et al., in Conrad et al., 2017)

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SMS Interviewing – Response Options

- Account for out of range responses in your programming.
 - Expect that people won't respond in the exact format you requested or without errors.

Thinking about yesterday, did you feel sadness most of the day, some of the day or none of the day?

Some of the day

Thinking about yesterday, did you feel sadness most of the day, some of the day or none of the day?

I don't know? I felt some sadness for a few min in the morn. How do you want me to answer?

Thinking about yesterday, did you feel sadness (1) most of the day, (2) some of the day, or (3) none of the day?

3.5

Thinking about yesterday, did you feel sadness most of the day, some of the day or none of the day?

Nun of day

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SMS Interviewing– How Many Questions Can You Ask?

- The limited research suggests you may be able to ask several questions (>10) without significant increases in break-off, but more research is needed.
- In a study by Schober et al., 2015, nearly 90% of participants completed a 32 questions SMS survey, which was similar to the completion rate via voice.

- From Marlar & McGeeney, 2014:

Mode	# Questions	% of respondents who completed all questions (once started)
SMS	5	92.0%
SMS	12	81.4%
SMS to Web	5	98.6%
SMS to Web	12	91.4%
Phone	5	100%
Phone	12	100%

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SMS Interviewing– Is Measurement Different?

More research on measurement and design of SMS interviews is needed!

Limited research has found that compared to phone interviews, SMS responses have fewer rounded numeric responses, less non-differentiation, and more disclosures of sensitive behaviors. Measurement patterns also seem to be more similar to phone than to web.¹⁴

- On average, phone respondents had higher mean scores than those in the SMS treatments.

	Phone (5)	Phone (12)	SMS (5)	SMS (12)	SMS-Web (5)	SMS-Web (12)
Mean	4.44	4.54	4.24	4.13	4.12	4.21

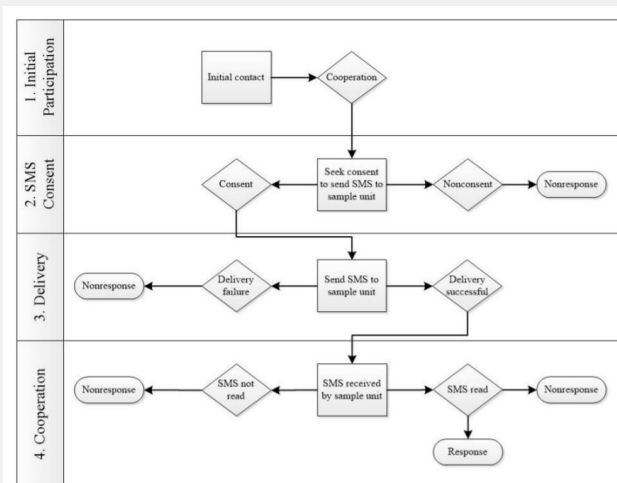
¹⁴ See Marlar and McGeeney, 2014; Conrad et al., 2017

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NONRESPONSE

A Framework for SMS Response



See Hastings, 2017

Who Consents?

- From the Gallup Panel:
 - Those who consented to receiving text messages were very similar demographically to those who did not consent.
 - Small demographic differences did exist; consenting participants were slightly more likely to be:
 - older
 - college graduates
 - white
 - The biggest differences between these groups were behavioral. The SMS consent groups were much more likely to be “high responders” than the SMS non-consenting group.

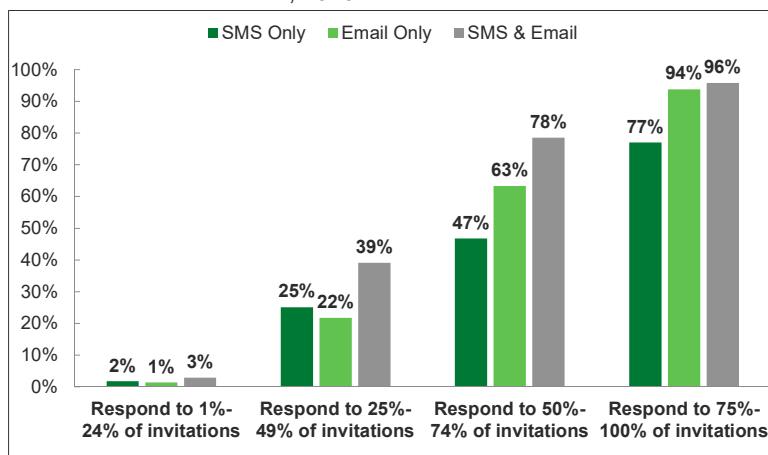


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Who Responds?

From Kanitkar and Marlar, 2015:



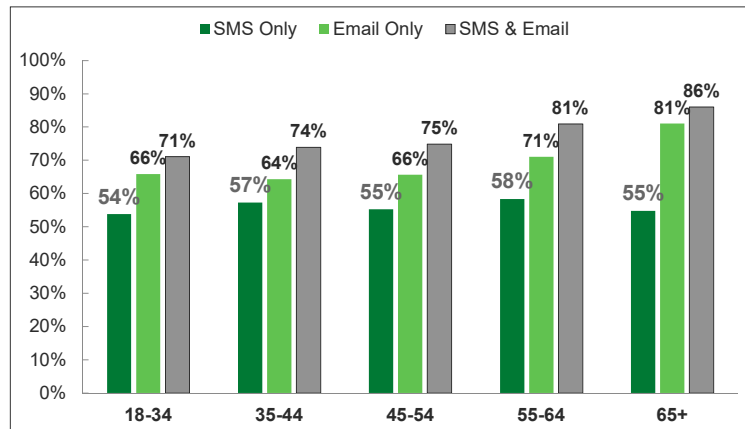
- A combination of SMS and email contacts significantly improved response rates within each group of panel members, except for individuals with the lowest propensity to respond.

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Method-Type Comparisons by Age

- Response rates using SMS only were similar across age groups. A combination of SMS and email helped improve response rates across all age groups.

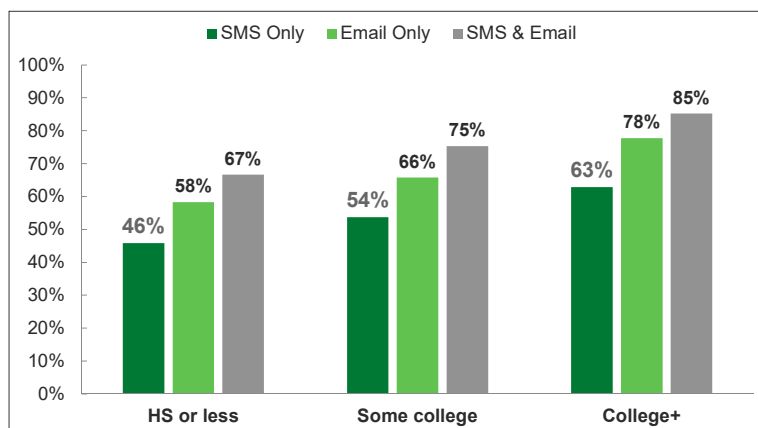


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Method-Type Comparisons by Education

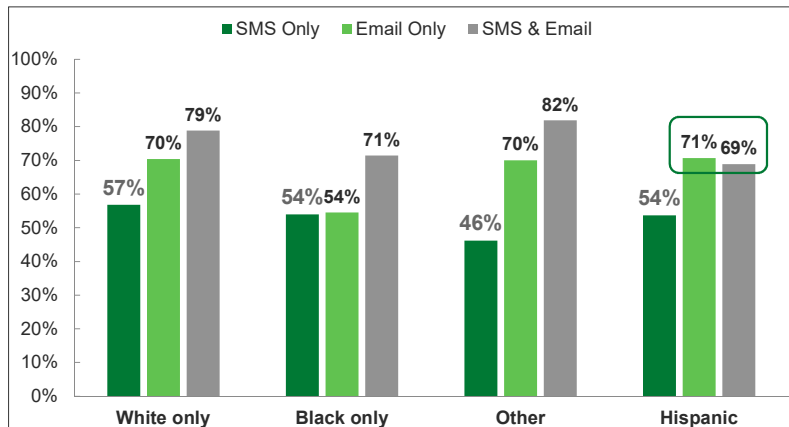
- Similar patterns were also found for education groups.



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Method-Type Comparisons by Race/Ethnicity



Findings were somewhat different within the Black and Hispanic groups.

- For Black respondents, SMS only and email only performed equally as well, while SMS with email significantly improved response rates.
- For the Hispanic group, SMS offered no improvement in response rates.

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Calculating Response Rates

- Disposition codes are available for sent messages (more on this later).
- Senders can assign contact/noncontact status to allow for calculation of response rates and other outcome metrics (See Steeh, Buskirk, and Callegaro, 2007 for a good discussion of calculating SMS outcomes).
- Depending on design and how consent was obtained, senders may need to think of the response rates like a panel response rate with multiple stages of selection.¹⁵

OUTCOME	Percentage
Carrier blocked message	6%
Message failed	3%
Device does not support text message	4%
Device unreachable	<1%
Opted out	<1%
Partial complete	2%
Complete	11%
No reply	74%

¹⁵ See Callegaro & Disogra (2009).

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SMS IMPLEMENTATION

Where to Begin: SMS Providers

- **API services**

- **Twilio:** Provides both U.S. and international options; flexibility outside of surveys
- **Nexmo, Bandwidth, Sinch:** API-based services for general SMS services

- **Platform-based services**

- **Qualtrics:** Works for U.S. and international; integration with other services
- **Instant Census:** Custom-built SMS surveys; U.S. use

What is an API?

An API, or application programming interface, is a structured 'highway' of sort that allows computers to communicate with each other in an expected fashion. Companies set up APIs so that information from customers, suppliers, and others can be captured, sent, processed, and responded by computers without human intervention.

Costs

- Costs vary by country and service provider
 - In the U.S., generally stable – and relatively inexpensive – for API-based services (around \$0.0075 per chunk)
 - International can vary widely; also, pay by carrier, which may not be known a priori
 - India: \$0.01; Uganda: \$0.065; Morocco: \$0.072
- There can be costs to respondents
 - Depending on country and plan, respondents may pay per message
 - Will there be compensation for these costs?
- The math on SMS is a little complicated
 - SMS are not sent per message, but per segment
 - Each segment is 160 characters; if one's message is 300 characters, then it is two segments
 - Unicode – emojis, smart quotes, script alphabets – is more 'expensive' in terms of characters; it is 67 characters
- When calculating expected cost, it is important to do so on a per segment basis, not message

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Ask Provider for Metadata



- Crucial with SMS are metadata associated with survey
 - Will help understand who received what, what numbers were bad, who opted out, which carriers blocked messages
 - Rich history with timestamps that can help planning future messaging
- Accessible via APIs or an interface

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Setting up SMS System

- Short versus long code
 - Short codes are helpful number – 5 to 6 digits – that are associated with a particular company; send/receive possible
 - Long codes are just phone numbers, often dedicated for purposes of SMS
- Carriers can be restrictive; best not...
 - To have a SMS look like spam
 - Limit shortened URLs with generic content
 - Include opt-out language
- URL shortening (bitly, tinyurl)
 - Maintain URL sanctity
 - Limit costs



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Required Elements of the Messages

- Introduction can be important
 - It helps preface the reason for the SMS
 - Be careful on character count to try and limit the number of non-survey message
- Many services automatically append "stop" language for people to opt-out, but helpful to have as well
- Ultimately, it is the sender's responsibility to manage stops and opt-outs



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Thank you!

Jenny Marlar, M.S., Gallup | Matt Hoover, Ph.D., Gallup
jenny_marlar@gallup.com | matt_hoover@gallup.com

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