

SUPPLEMENTAL MATERIAL

How does mode of qualitative data collection affect data and cost?

Findings from a quasi-experimental study

Namey et al.

Annex I. Summary of literature comparing in-person to online focus groups

Study authors	Study population (topic)	Mode (n)				Metric(s)	Findings
		In-person	Online video	Online synch	Online asynch		
Multiple comparisons							
Abrams, et al. (2015)	Alumni of agricultural and natural resources class (evaluation of class)	2	2	2	<ul style="list-style-type: none"> • Topic-related data • Topic unrelated data • Researcher ratings of data richness • Word count • Linguistic characteristics of data richness 	<ul style="list-style-type: none"> • In-person and online video FGs had a “high” level of richness. • In-person and online video FGs had a greater number of words • Online asynchronous text FGs produced less rich data and more off-topic data. 	
Brüggen and Willems (2009)	Young professionals/ with mobile jobs (attitudes on mobile phones and internet)	2	2	1 ^a	<ul style="list-style-type: none"> • Depth • Breadth • Efficiency • Group dynamics • Nonverbal impressions • Attitudes of respondents 	<ul style="list-style-type: none"> • In-person FGs had greatest depth, breadth, and efficiency, followed by asynchronous text-only. • Online synchronous text-only FGs had the least depth but were efficient. 	
Rupert et al. (2017)	Individuals with type-2 diabetes (use of tech to communicate with health care providers)	2	2	2	<ul style="list-style-type: none"> • Cost • Recruitment • Participant logistics 	<ul style="list-style-type: none"> • Online focus groups offered minimal cost savings compared with in-person groups • Recruitment timing did not differ by mode • Show rates were higher for in-person FGs • Online chat groups were easiest to join and required the least preparation 	

Study authors	Study population (topic)	Mode (<i>n</i>)				Metric(s)	Findings
		In-person	Online video	Online synch	Online asynch		
In-person compared to online synchronous text							
Campbell, et al. (2001)	Individuals with colorectal cancer (lifestyle, cancer screening, treatment)	2	2	<ul style="list-style-type: none"> • Thematic content 	<ul style="list-style-type: none"> • Similar themes in both types of FGs • More expansive (and sometimes discursive) discussion in in-person FGs • More discussion of sensitive topics in online synchronous text FGs 		
Reid and Reid (2005)	Undergraduates (marriage and body image—separately)	8 ^b	8 ^b	<ul style="list-style-type: none"> • Words per participant • Equality of participation • Self-disclosure • Bales' Interaction Process Analysis (IPA) • Participant experience 	<ul style="list-style-type: none"> • Online synchronous text FGs were more efficient; less interaction between participants • More solidarity, agreement, and positive socioemotional acts with in-person FGs • No difference in self-disclosure across modalities • Greater participant satisfaction with in-person FGs 		
Schneider et al. (2002)	U.S. adults (opinions about health-related websites)	4	4	<ul style="list-style-type: none"> • Number of comments • Number of words • Brief statements of agreement • Off-topic comments • Equality of participation 	<ul style="list-style-type: none"> • In-person FGs generated more words and words per comment • Online synchronous text FGs generated more short comments • Online FGs had more uniform individual participation than in-person FGs • No difference in off-topic comments 		

Mode (n)

Study authors	Study population (topic)	Mode (n)				Metric(s)	Findings
		In- person	Online video	Online synch	Online asynch		
Underhill and Olmsted (2003)	Navy enlisted sailors (leisure time activities)	9	1	8		<ul style="list-style-type: none"> • Equality of participation • Quantity of information • Quality of information • Participant satisfaction • Intragroup conflict • Perception of social presence 	<ul style="list-style-type: none"> • No significant difference in equality of participation, quantity of information, quality of information, participant satisfaction, or perception of social presence. • Online FGs had significantly more intragroup conflict.
Synnot et al. (2014)	Individuals with multiple sclerosis and their family members (online health information seeking)	4	1 ^c			<ul style="list-style-type: none"> • Thematic content • Qualitative observations by researchers 	<ul style="list-style-type: none"> • Thematic content was similar across modalities. • Online synchronous text FGs were more efficient and on-topic. • In-person FGs included more personal anecdotes. • In-person FGs had greater interaction.
Woodyatt et al. (2016)	Gay and bisexual men in the U.S. (interpersonal violence)	2	2			<ul style="list-style-type: none"> • Word count • Intragroup conflict • Thematic content • Off-topic content 	<ul style="list-style-type: none"> • In-person FGs yielded much higher word counts. • Online synchronous text FGs produced more off-topic comments. • Similar thematic content across modalities (25/27 shared codes). • Sensitive information shared more candidly in online synchronous text FGs.

Mode (n)							
Study authors	Study population (topic)	In- person	Online video	Online synch	Online asynch	Metric(s)	Findings
In-person compared to online asynchronous text							
Nicholas et al. (2010)	Children with chronic health conditions (experience of paper v. online questionnaires)	3			3	<ul style="list-style-type: none"> • Quantity of participant contributions • Thematic content • Participant experience 	<ul style="list-style-type: none"> • Greater volume of participant words in in-person FGs • Parallel patterns of topics observed in both modalities. • Similar turn-taking and a comparable proportion of speaker dominance and quiescence between modalities • Online asynchronous FGs were more focused on topic and efficient • Online format offered a greater sense of personal security, increasing disclosure and transparency

^a Email-based e-Delphi group

^b These focus groups included only 3 people each.

^c One 33-person online forum.

Annex II. Findings from literature comparing in-person to online qualitative data collection modalities

Characteristic	Mode				
	In- person	Online video	Online synch text	Online asynch text	No differences
Substantive thematic differences among modalities					Abrams et al. (2015) Campbell et al. (2001) Nicholas et al. (2010) Synnot et al. (2014) Woodyatt et al. (2016)
Greater “richness” or expansiveness	Abrams et al. (2015) Brüggen/Willems (2009) Campbell et al. (2001) Nicholas et al. (2010) Synnot et al. (2014)	Abrams et al. (2015)			Underhill/Olmsted (2003)
Higher word count	Abrams et al. (2015) Brüggen/Willems (2009) Nicholas et al. (2010) Schneider et al. (2002) Woodyatt et al. (2016)	Abrams et al. (2015)		Brüggen/Willems (2009)	
More off-topic contributions	Brüggen/Willems (2009) Campbell et al. (2001) Nicholas et al. (2010) Synnot et al. (2014)		Underhill/Olmsted (2003) Woodyatt, et al. (2016)	Abrams et al. (2015) Brüggen/Willems (2009)	Schneider et al. (2002)
Greater efficiency	Brüggen/Willems (2009)		Brüggen/Willems (2009) Reid and Reid (2005) Synnot et al. (2014)	Nicholas et al. (2010)	
More equal participation			Schneider et al. (2002) Woodyatt et al. (2016)		Nicholas et al. (2010) Underhill/Olmsted (2003)
More participant interaction	Reid and Reid (2005) Synnot et al. (2014)				Brüggen/Willems (2009)

Annex III. Description of data collection procedures by mode

In-Person and Online Synchronous Mode Procedures

The in-person mode for IDIs and FGs followed traditional qualitative data collection procedures (Guest, Namey and Mitchell 2013; Krueger and Casey 2015) and was conducted in a conference room at the study office, with an assistant present for FGs.

All synchronous online activity (video and chat-based text) participants used internet-connected computers, at their homes or other convenient location, to access a private online platform at a designated date and time. Online video events involved web-connected video through this platform, with audio over a telephone conference line. Participants could see the moderator, other participants (FGs), and themselves. For synchronous text-based activities, the moderator typed questions and follow-up probes while participants typed their responses, all in real time. FG sessions were conducted chatroom style, where respondents could type simultaneously, and participants could see each other's responses live.

Online Asynchronous Mode Procedures

Asynchronous, text-based data collection modes used email (IDIs) or a private online discussion board (FGs). For IDIs, the interviewer emailed the participant three–five questions to which the participant responded in 24–48 hours. The interviewer's next email contained follow-up questions and new questions. The same procedure was followed for asynchronous FGs: the moderator posted three–five questions on the discussion board each day over several days. Participants were asked to sign in each day, respond to the questions, and read and comment on each other's postings. The moderator reviewed responses several times a day and posted follow-up questions as appropriate, to which participants could again respond. Participants were prompted to complete unanswered questions before moving on to new ones.

Annex IV. Time and cost inputs relevant to data collection by mode
 (blue cells indicate relevance to FGs only)

Cost inputs	In-person	Online Video	Online Chat	Online Email/Posts
Participant incentives	X	X	X	X
Participant refreshments	X	--	--	--
Scheduling time	X	X	X	X
Interviewer/moderator time	X	X	X	X
Assistant time	X	--	--	--
Online hosting platform fee	--	X	X	X
Transcription	X	X	--	--
Transcript formatting	--	--	X	X
Travel*	X	--	--	--
Travel time	X	--	--	--

*Based on travel costs estimated in Rupert et al. (2017)

Annex V. Abbreviated thematic codebook for the study

Name	# IDs (n=48)	# FGs (n=24)	Brief description <i>Use this code for discussion of...</i>
Abundance of caution	18	20	...taking most cautious/conservative route as a way to avoid risk or negative outcomes.
Access to care	2	1	...justification of risk taking because she knew that if something bad were to happen, she would have access to health care.
Age	8	7	...maternal age as a factor in decision-making during pregnancy.
Altruism	9	12	...participating in a study in order to benefit science and overall society.
Avoid info to protect peace of mind	8	13	...the preference to have less information in order to maintain well-being, avoid negative feelings, etc.
Baby has Zika	6	2	...her baby suffering potential negative outcomes as a result of zika infection in utero.
Birth defect_disability	42	24	...birth defects or disabilities generally, excluding specific references to microcephaly.
Can't decide for baby	11	9	...the fetus as a separate person with autonomy and that she can't make decisions on its behalf.
Changes over time	16	19	...the perception that information/guidelines/data change over time and that this impacts decision-making.
Check w doctor	38	23	...a woman making her own assessment on a decision, but then seeking confirmation from a doctor before taking action.
Child quality of life	17	17	...the future quality of life of the unborn child.
Class of drugs	10	12	...the different classes of drugs and/or guidelines for drug use based on class.
Confirm w second source	10	10	...getting information from one source but need to confirm with a second source.
Conflicting info from different sources	12	19	...two or more sources providing conflicting advice/information.
Control	9	10	...a desire to be in control of risk, exposure, outcomes, etc.
Death of child	25	20	...the death of the fetus or child (before or after birth), excluding abortion.
Death of mother	1	1	...the death of the pregnant mother (before or after birth).
Decision conflict	25	22	...having a difficult time making a decision due to conflicting information, difficulty estimate risk, or conflicting priorities.

Name	# IDs (n=48)	# FGs (n=24)	Brief description <i>Use this code for discussion of...</i>
Defer decision to other	29	18	...strategies in which women shift the burden of reaching a decision on a pregnancy-related topic to someone else, such as a provider.
Didn't know I was pregnant	3	10	...risk justification because the woman did not know she was pregnant.
Didn't know it was risky	2	1	...risk justification because she didn't know the activity was risky.
Doctor's approval	5	1	...risk justification because she received doctor approval.
Doing own research	38	24	...a woman gathering information or data on a particular topic from one or more sources in order to make a decision.
Drugs are drugs	17	15	...the idea that drugs are conceptually the same, regardless of whether they are over the counter, prescribed or vaccines.
Familiarity w risky thing	16	11	...experience with or knowledge of a "risky" thing that makes the "risky thing" feel known and familiar (and often, therefore, less risky).
Family quality of life	22	24	...the potential for diminished quality of life - for family - referring to the emotional/financial strain of raising a child with disabilities.
Feeling uncertain about risk	3	3	...considering the risk of something but can't make a clear decision as to whether or not it is risky or not risky.
Fertility issues	7	12	...how having had difficulty getting pregnant and/or having previous pregnancy losses influences decision-making.
Fragile pregnant woman	3	6	...the norm that pregnant women are fragile and require extra accommodations.
Going against provider recs	10	12	...a woman deciding to do something, in contradiction of what has been recommended by a health care provider.
Guilt	27	18	...guilt over action (or inaction) taken during pregnancies, including doing things perceived as risky.
Hard to know unless in that situation	2	9	...having trouble making a decision because it is a hypothetical situation.
History of family_friends_peers	15	19	...past experiences of family/friends/peers in making decisions related to pregnancies.
Hype	7	15	...how publicity and social attention around a specific issue influences decision making.

Name	# IDs (n=48)	# FGs (n=24)	Brief description <i>Use this code for discussion of...</i>
I wanted to	5	8	...risk justification because she did something, knowingly taking a risk, because of her preferences or interest.
International norms	8	9	...the international differences in social norms around pregnancy.
Invasion of privacy	4	8	...how everyone feels they can give unsolicited advice, resources, and potentially pass judgment because she is pregnant.
I've cut everything else out	1	3	...risk justification because she is avoiding other types of risk, meaning her overall risk is still low.
Judgment	23	23	...experiences of judgment from others (society, peers, family) for her decisions regarding pregnancy, or that she judged other women for their decisions during pregnancy.
King fetus_baby first	17	21	...the fetus/baby as the top priority that should take precedent above herself or others when making decisions.
Lack of data	35	22	... the inability to characterize or attribute risk due to a lack of (long-term) data and/or data with pregnant women.
Lack of familiarity w risky thing	2	5	...not having previous experience with or exposure to a risky thing.
Life is life	11	14	...the idea that fetuses are alive and therefore should be not be aborted.
Likelihood of exposure to other disease	5	9	...the prevalence or likelihood of exposure to a disease other than the zika virus.
Maintaining lifestyle_habits	18	19	...the woman's desire or ability to keep some aspects of the woman's non-pregnant life, habits, and lifestyle the same when she is pregnant
Medical condition	18	21	...how having a current or previous medical condition influences decision making during pregnancy.
Microcephaly	32	23	...microcephaly as potential risk of Zika virus, vaccines, research participation, etc.
Misc neg outcome	20	18	...any negative outcomes (ex. Astham, gestational diabetes, etc.), excluding specific references to microcephaly, birth defects, or fetal death.
Mom has to be ok	37	22	...rationalizing or explaining a risk she took by prioritizing her own well-being, which will, in turn, keep the baby safe.
Neonatal death from Zika	16	5	...the idea that a child born with Zika would die within a few days or weeks after birth.

Name	# IDIs (n=48)	# FGs (n=24)	Brief description <i>Use this code for discussion of...</i>
No trust_confidence	18	20	...lack of trust or level of uncertainty in a set of facts, a source of information or advice
Other people do it	2	1	...risk justification because many people take risk and don't experience a negative outcome.
Overabundance of info	5	8	...the idea that woman is / can feel overwhelmed by having too much information.
Parity	16	20	...how the difference in mentality between a first pregnancy and subsequent pregnancies can impact decision-making.
Peace of Mind	22	18	...making a decision in order to alleviate or avoid stress or worry from risk.
Perfect pregnant woman	6	12	...the norm that pregnant women are supposed to do everything correctly, be informed, make all the right decisions..
Possible vs definite exposure	11	5	...the comparison between a definite exposure (like a medication) with an unknown exposure (like a bug bite).
Potential Zika exposure	3	9	...potential exposure to Zika during or near pregnancy, as personal history that provides context for decision making.
Prevalence of Zika	40	23	...the probability of being exposed to zika based on geographic area.
Probability of good outcome	19	12	...the likelihood of a positive outcome or benefit.
Profession	15	14	...how a woman's profession provides context to decision-making.
Reduced discomfort	15	14	...the benefit of reducing discomfort, usually through medication use.
Regret avoidance	24	22	...making decisions to avoid feeling regret in the future.
Religious beliefs	2	6	...how religious beliefs add context to decision making.
Right to choose	32	21	...the idea that women have the right to choose whether or not to have an abortion.
Risk mitigation thru dosing	34	24	...how a woman estimates and reduces risk by reducing the amount of exposure to a potentially harmful substance or activity.
Risk of bug spray	2	8	...the risks associated with using bug spray (due to chemical content) during pregnancy.
Risk of severe disability given diagnosis	37	24	...the probability of severe disabilities given a particular diagnosis (e.g. probability of microcephaly given a diagnosis of Zika).

Name	# IDIs (n=48)	# FGs (n=24)	Brief description <i>Use this code for discussion of...</i>
Sense of preparedness	24	23	...the need to do something and/or learn something in order to feel prepared.
Severity of negative outcome	31	22	...the perception of how bad, impactful, or serious a negative outcome would be.
Short term vs long term	5	8	...how long or short of a period the impact of a decision will be felt.
Side effects	29	18	...potential physical side effects of Zika virus, vaccines, medication use, etc.
Specific questions that need answers	44	24	...specific information that a woman needs to make an informed decision.
Suffer through it	40	24	...the idea of mothers enduring some level of discomfort or sacrifice in order to avoid risk for their unborn child.
Timing during pregnancy	15	16	...risk justification due to the timing or trimester of the risk taking during pregnancy.
Trust your gut	15	16	...a woman relying on her instinct, intuition, or "gut" in making a decision.
Trust_confidence	34	23	...confidence and trust in a set of facts, a source of information or advice
Uncertain and delayed onset	16	16	...the idea that an unknown negative outcome may occur later based on a decision made now.
Unknown probability of risk	39	24	...the inability to describe, quantify or qualify risk because she doesn't know or there is a lack of information about risks.
Unspecified_unknown neg outcome	24	17	...an unknown negative outcome that may result from risk taking.
Valuing being informed	29	18	...the importance of having all of the information and data that she needs in order to make appropriate and safe decisions during pregnancy
Vax are bad	7	6	...the general belief that vaccines are a bad/irresponsible/unsafe thing to get.
Vax are good	17	15	...the general belief that vaccines are a good/healthy/beneficial/responsible thing to get.
Vax protects baby	23	23	...how vaccinations received during pregnancy benefit the unborn baby by bolstering their immune system.
Woman decides	17	15	...the processes or strategies in which the woman assesses and makes the final decision on a pregnancy-related topic.

Annex VI. Thematic content by mode, according to code frequency as indicator of salience

Tercile		Individual Interviews		Focus Groups	
		# codes	% present in all modes	# codes	% present in all modes
1st	High frequency codes	28	100	27	100
2nd	Medium frequency codes	28	96	29	97
3rd	Lower frequency codes	29	28	29	55

Annex VII. Time and group-size inputs for cost calculations[^]

	In-person	Online video	Online chat	Online email/post
Individual Interviews				
Mean time to schedule (hrs)	3	1	2	3
Mean time to conduct (hrs)	0.7	0.9	1.5	0.4
Focus Groups				
Average group size*	4.5	5.2	5.2	4.8
Mean time to schedule (hrs)	5	7	5	4
Mean time to conduct (hrs)	2	2	2	3

*all rounded to 5 participants per group for consistency

Individual Interviews		<i>In-person</i>	<i>Online video</i>	<i>Online chat</i>	<i>Online email</i>
Average costs					
Participant	Incentive at \$40/ea	\$ 40	\$ 40	\$ 40	\$ 40
	Refreshments at \$5/ea	\$ 5	NA	NA	NA
Staffing	Staff scheduling time at \$25/hr	\$ 75	\$ 25	\$ 50	\$ 75
	Interviewer time at \$50/hr	\$ 37	\$ 45	\$ 77	\$ 19
Hosting	Online platform costs	NA	\$ 133	\$ 61	NA
Data processing	Transcription costs	\$ 88	\$ 108	NA	NA
	Transcript formatting costs	NA	NA	\$ 21	\$ 21
Average cost / data collection event		\$ 245	\$ 351	\$ 248	\$ 154
With illustrative travel costs	Travel expenses	\$ 150	NA	NA	NA
	Interviewer travel time at \$50/hr	\$ 50	NA	NA	NA
Average cost / data collection event		\$ 445	\$ 351	\$ 248	\$ 154

Focus Groups		<i>In-person</i>	<i>Online video</i>	<i>Online chat</i>	<i>Online post</i>
Average costs					
Participant	Incentive at \$40/ea	\$ 200	\$ 200	\$ 200	\$ 200
	Refreshments at \$5/ea	\$ 25	NA	NA	NA
Staffing	Staff scheduling time at \$25/hr	\$ 125	\$ 175	\$ 125	\$ 100
	Moderator time at \$50/hr	\$ 100	\$ 100	\$ 100	\$ 150
	Staff assistant time at \$25/hr	\$ 75	NA	NA	NA
Hosting	Average online platform costs	NA	\$ 678	\$ 592	\$ 928
Data processing	Average transcription costs	\$ 347	\$ 441	NA	NA
	Average transcript formatting costs	NA	NA	\$ 29	\$ 34
Average cost / data collection event		\$ 872	\$ 1,595	\$ 1,046	\$ 1,411
With illustrative travel costs	Travel expenses	\$ 600	NA	NA	NA
	Interviewer travel time at \$50/hr	\$ 200	NA	NA	NA
Average cost / data collection event		\$ 1,672	\$ 1,595	\$ 1,046	\$ 1,411

[^] Note that we performed recruitment, scheduling, data collection, and data formatting in-house; we contracted online hosting platforms and transcription services. The live-generated transcripts from the online text-based modes required some post hoc formatting. For illustrative travel costs, for both IDIs and FGs, we assumed four hours round-trip travel time. For the IDIs, we divided travel cost and time by four to assess per-event costs, assuming four IDIs could be completed on one trip.