

SHOULD PARTICIPANTS BE GIVEN A MOBILE?

EFFECTS OF NOVELTY VS UTILITY

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Mobile phones for research

- Uses
 - Ambulatory assessment
 - Repeated measures assessment
 - Short follow-up questionnaires

Mobile phones for research

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 - Ambulatory assessment
 - Repeated measures assessment
 - Short follow-up questionnaires
- Benefits
 - Ubiquity (ACMA, 2011)
 - Cost
 - Convenience
 - For the researcher
 - For participants
 - Unobtrusiveness

Standardization

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- Researchers seeking to standardise the response platform can give participants an appropriate phone for the purposes of participation (i.e. as in Alfven, 2010; Battestini, Setlur, & Sohn, 2010).
- **Given that mobile telephone ownership is ubiquitous in Australia (ACMA, 2011), lending a mobile phone to participants commonly involves replacing a phone already in use.**

Standardization

- Standardization important for apps
 - Compatibility with phone brand (iPhone vs android)
- Also for SMS
 - Touchscreen vs number keypad

Novelty hypothesis

- Novel modes of participation can increase engagement with research (Dillman, 2009)
- The novelty hypothesis states that **providing a mobile telephone should be associated with more complete responses.**

Utility hypothesis

- It could be argued that participants will be more likely to carry their own mobile with them than one provided.
- The utility hypothesis states that **participants using their own mobile telephone should provide quicker responses than those using a borrowed mobile**, due to the pre-existing usefulness of their mobiles in their everyday lives.

Method

- 179 undergraduates
 - aged 17-55 (M=22)
 - 58% female
- Completed a six-item questionnaire
 - Sixth item was optional
 - Repeated completion, in response to 20 SMS prompts sent on a random schedule across two days.
- Responded using an app ($n=93$), or SMS ($n=86$)

Novelty vs utility

Own Mobile

Borrowed Mobile



Novelty vs utility

	Own SIM	Borrowed SIM
Own Mobile		
Borrowed Mobile		

- Lending a mobile phone to participants commonly involves replacing a phone already in use.

Novelty vs utility

	Own SIM	Borrowed SIM
Own Mobile	<ul style="list-style-type: none">• Low novelty• High utility	
Borrowed Mobile	<ul style="list-style-type: none">• High novelty• High utility	<ul style="list-style-type: none">• High novelty• Low utility

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- * Can't deprive participants of their current mobile phone
- Replacing a phone already in use.

Response behavior

- Completion
 - Partial
 - Basic
 - Full
- Response delay
 - Time between prompt and corresponding response, in minutes

Results

		n	% of responses that met these completeness criterion			M response delay in minutes
			Partial	Basic	Full	
App	Borrowed	39	83%	82%	75%	7
	Own	54	75%	74%	61%	3
SMS	Borrowed (borrowed SIM)	13	59%	24%	23%	7.5
	Borrowed (own SIM)	11	75%	36%	36%	5
	Own (own SIM)	62	74%	33%	29%	4

- Analyses were a series of logistic and poisson multilevel models, with ownership (at level 2) as a predictor of response behaviour (at level 1) nested by participant.

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- **Twice** as many iPhone owners than non-iPhone owners.
- Disproportionately **high number of no-shows** in non-iPhone owners.

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- Predictor significance will be established by 95% confidence intervals, bootstrapped at 500 replicates.

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- There was not a significant difference in partial or basic response completeness between those using their own or a borrowed mobile phone ($b=-0.78$, 95% CI [-0.95, -1.98]) ; and $b=-0.73$, 95% CI [-1.79, 0.03] respectively).

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- Participants using their own mobile were significantly, 0.33 times less likely to provide a full response than those using a borrowed mobile (b=-1.10, 95% CI [-2.21, -0.41]).

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- Participants those using their own phone took significantly less time to respond ($b=-0.38$, 95% CI $[-0.40, -0.05]$) than those using a borrowed phone.

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- There was not a significant difference in response rate between those using their own or a borrowed mobile phone to respond via SMS for partial, basic, or full completions (own mobile $b=0.82$, 95%CI [-0.002, 1.63]; borrowed mobile $b=1.01$, 95%CI [-0.23, 2.38]; own mobile $b=1.00$, 95%CI [-1.01, 4.20], borrowed mobile $b=0.96$, 95%CI [-2.61, 4.56]; and own mobile $b=0.72$, 95%CI [-1.26, 3.72], borrowed mobile $b=1.008$, 95%CI [-2.35, 4.39] respectively).

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- Participants using a borrowed SIM took significantly longer to respond than those using their own SIM either in their own mobile, or a borrowed mobile (own mobile $b=0.72$, 95%CI [-1.30, -0.37], borrowed mobile $b=1.008$, 95%CI [-1.35, -0.11]).

Conclusions

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- Both the **novelty** and **utility** hypotheses were supported amongst those responding via app:
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Conclusions

- It may be reasonably assumed that a large portion of the university population owns an iPhone.
- Both the **novelty** and **utility** hypotheses were supported amongst those responding via app:
 - participants using their own phone were significantly less likely to provide a full response, but responded more quickly, than those using a borrowed mobile.
- The **utility** hypothesis was supported amongst those responding via SMS
 - participants using a borrowed mobile with a borrowed SIM took significantly longer to respond than those using their own SIM (either in a borrowed mobile, or their own mobile).

Conclusion

Researchers seeing to conduct ecological momentary assessment using mobile phones should be aware that the choice to provide a mobile telephone **(and/or SIM)** to standardise participant response platforms can impact on participant's response behaviour.

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References

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