

Respondent engagement and performance: a framework for understanding participation in survey data collection.

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Background:

This paper presents a framework for the concept of engagement, which is suggested as the determinant of both participation and then response.

The respondent's motivation, ability and opportunity are presented as dimensions of engagement.

Data from the *Understanding Society* Spending Study were used, together with supplementary covariates take from wave nine of the Innovation Panel.

Methods:

- Number of app uses used as an indicator for engagement.
- Factors affecting the three dimensions of engagement used as explanatory variables.
- Four research questions – two presented here:
 - I. *What factors are predictive of level of engagement?*
 - II. *How does engagement change over the course of the study, and what factors predict this?*
- RQ1 makes use of a hurdle model to examine predictors of participation and number of responses offered.
- RQ2 uses Hierarchical Linear Modelling to examine changes over time in engagement.

Results:

RQ1: *What factors are predictive of level of engagement?*

A hurdle model was used to model both participation and number of app uses conditional on initially participating. The results for the selection and count models are not presented individually instead, presented below are the average marginal effects of the overall model.

In the selection model both keeping a budget and willingness to participate in mobiles survey tasks were significant predictor of participation. In the count model, only willingness remained as a predictor of number of app uses.

Table 1. Average marginal effects for a hurdle model regressing factors affecting engagement on the number of times the Spending Study app was used.

	β	SE
Long-term illness or disability	-0.81	0.75
Employed/self employed	0.36	0.74
Checks bank balance once a week or more	0.58	0.85
Keeps a budget	2.22**	0.68
Reported access to mobile technology at IP9	1.22	1.94
High self-reported ease of use of mobile technology	0.17	1.44
Number of activities mobile technology used for	0.13	0.14
Willingness to use mobile technology for survey tasks	1.91***	0.45
Scanning took too much time	1.05	0.66
Not confident using my phone or tablet for this kind of activity	-2.84	2.09
Not confident that information would be held securely	0.56	1.36
Not willing to share spending information	-3.38	2.35
Not interested	-2.00	1.70
Forgot to scan	0.48	0.34

Notes: n=2114

- Willingness to participate in mobiles survey tasks was predictive of high levels of engagement.
- Undertaking existing behaviours similar in nature to the task also proved predictive.

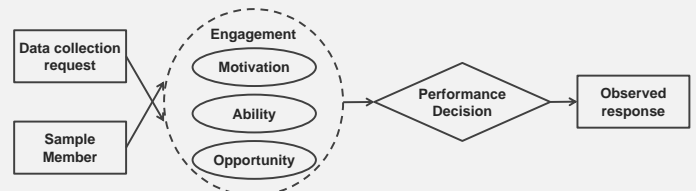
Innovation Panel (IP):

- Part of the UK Household Longitudinal Study – *Understanding Society*.
- Test-bed for new research areas and methodological experiments.
- Representative sample of ~1,500 households in Britain.

Spending Study (SS):

- Took place between waves nine and ten of the Innovation Panel.
- Sample drawn from members of IP9 responding households.
- Respondents reported expenditure using an app across a month.
- Reports in three forms: with a receipt, without a receipt & nothing bought.

Framework of engagement:



The above framework seeks to conceptualise the process underlying both the decision to participate, and decisions about the response offered.

It illustrates how the interaction of the request and the sample member produces a level of engagement which then drives whether and how a response is offered.

RQ2: *How does engagement change over the course of the study, and what factors predict this?*

Firstly, the effect of time on the number of app uses was modelled with a linear random slopes and random intercepts model, with time being measured by week of participation (the coefficient for time was $\beta = -0.55$, $p < 0.001$).

The slopes and intercepts of this model are then used as outcomes to model initial engagement and change in engagement across the study. The results for this subsequent model are presented below.

Table 2. OLS regression models examining the predictors of the intercepts and slopes of the individual trajectories, which model the intra-individual changes in app use, by time, as measured by week of participation.

	Intercepts		Slopes	
	β	SE	β	SE
Long-term illness or disability	0.00	0.45	-0.19*	0.08
Employed/self employed	0.32	0.44	-0.12	0.08
Checks bank balance once a week or more	-0.08	0.52	-0.13	0.10
Keeps a budget	0.38	0.39	0.02	0.07
Reported access to mobile technology at IP9	2.75*	1.32	0.20	0.24
High self-reported ease of use of mobile technology	-1.53	0.92	-0.12	0.17
Number of activities mobile technology used for	-0.21*	0.09	0.00	0.02
Willingness to use mobile technology for survey tasks	0.57*	0.25	0.02	0.05
Scanning took too much time	1.99*	0.79	-0.03	0.15
Not confident using my phone or tablet for this kind of activity	-2.18	1.90	-0.03	0.35
Not confident that information would be held securely	1.20	1.53	-0.18	0.28
Not willing to share spending information	-4.76	2.43	-0.43	0.45
Not interested	-2.63	1.72	0.00	0.32
Forgot to scan	0.45	0.41	0.05	0.08

Notes: n=268

- Willingness and longer term access to a device are significant predictors of initial higher engagement.
- Illness or disability was predictive of a lower slope – with the majority of slopes being negative, this indicates greater declines in engagement.

Next steps:

- Improve the specification of the existing models.
 - Introduce demographic controls
 - Include a control for level of spending.
 - Incorporate other predictors
- Explore a possible relationship between satisficing and engagement
 - Establish if there is evidence of satisficing in the Spending Study
 - Model predictors of that satisficing.
 - Model whether level of engagement is predictive of satisficing behaviour.

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