



Smart surveys: How active should respondents be in passive sensor data collection?

Casestudy: Household Budget Survey App

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Smart surveys

Smart surveys have at least one of the following smart features:

1. Device intelligence
2. Internal sensors
3. External sensors
4. Public online data
5. Personal online data
6. Linkage consent



Why use smart surveys?

- Ease the response task
- Decrease respondent burden
- Reduce respondent inability
- Improve data quality

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--> Active – passive data trade-off



Why active data collection?

- Respondent engagement
- Sensor error adjustment
- Legal (ethical)



How active or passive should we make our respondents?



Case study: Household budget survey app



11:03

Uitgaven toevoegen Gereed

Winkel* *Verplicht

De Jumbo

Datum* Vandaag

Overige Buitenland Online

Items

1x	Eieren	2.42
eieren		2.42
1x	Half volkoren	2.30
brood		2.30

Product, dienst, of korting toevoegen +

Korting op totaal -0.60

Totaal bedrag 4.12

15:52

Bon toevoegen Gereed

Winkel

Albert heijn Supermarkt

Datum Vandaag

Totaal prijs 6.60

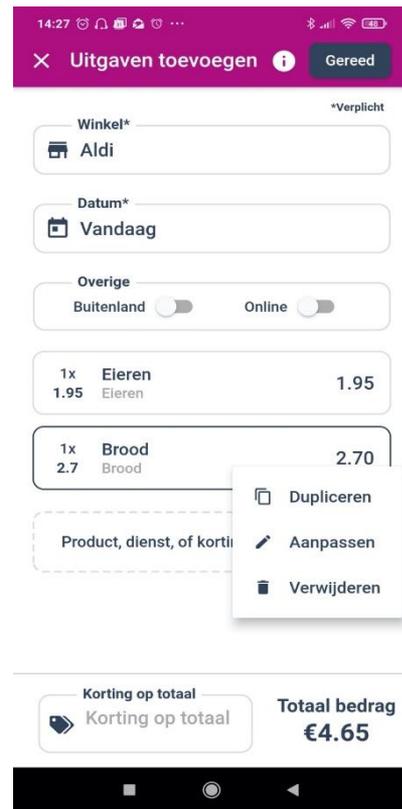
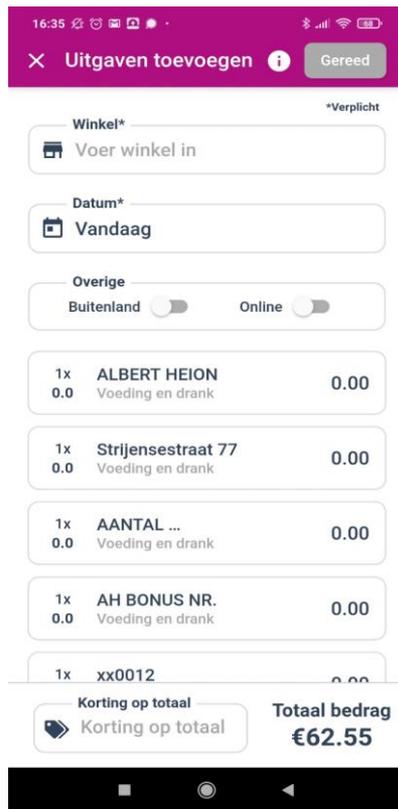
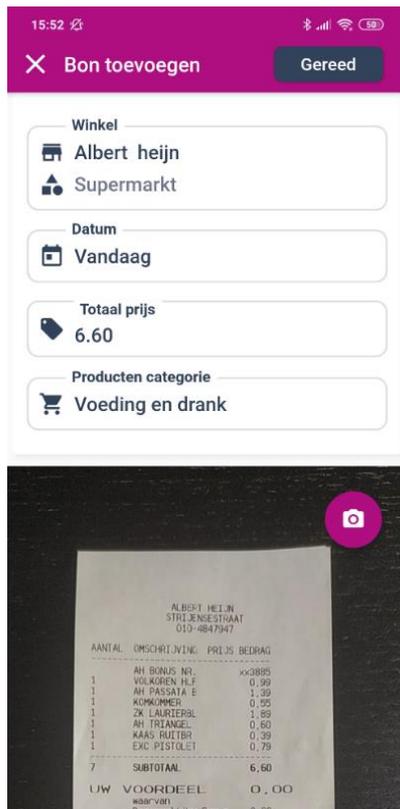
Producten categorie Voeding en drank

ALBERT HEIJN
STREKENSCHAP
OOP-BEHOEF

AANTAL	OMSCHRIJVING	PRIJS BEDRAG
1	AM BONUS NO. 100-0885	0.00
1	VOLKOREN HLF	0.99
1	AM PASSATA E	1.99
1	KOKOMMER	0.99
1	ZK LAURIEBIL	1.89
1	AM TIRAMEL	0.60
1	KAAS RIJTBIL	0.39
1	EXC-PISTOLET	0.79
7	SUBTOTAAL	6.60
UW VOORDEEL	0.00	



Smart feature: OCR scanning

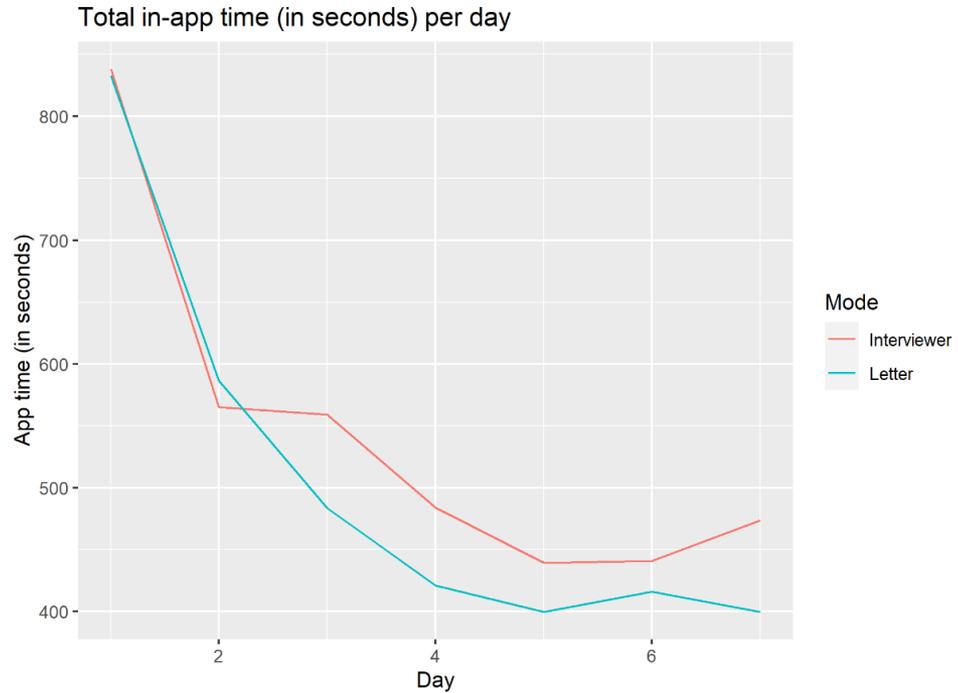


Results



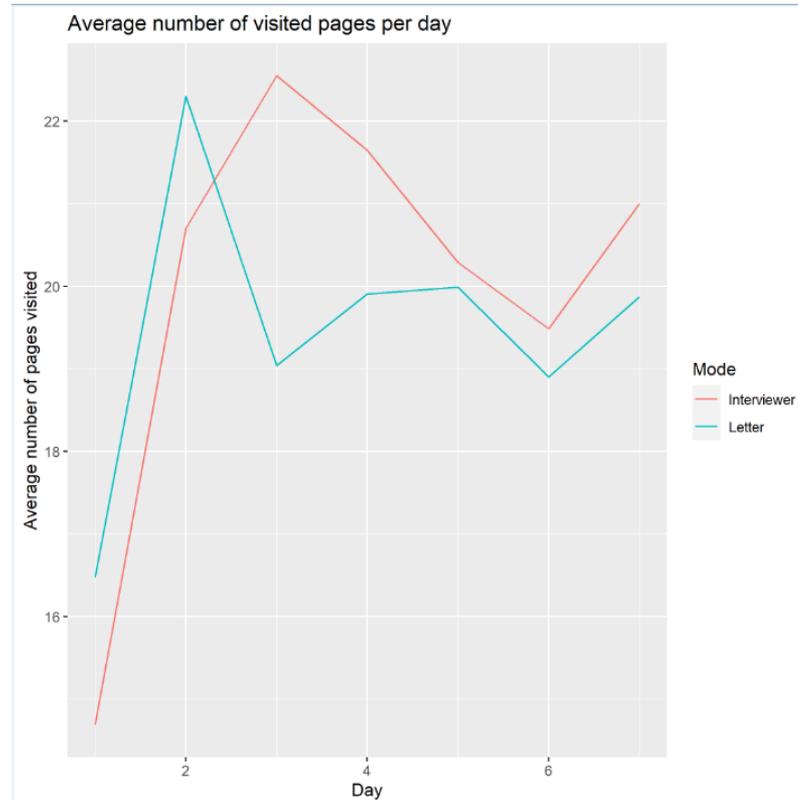
Motivation and involvement

- Time spent in app



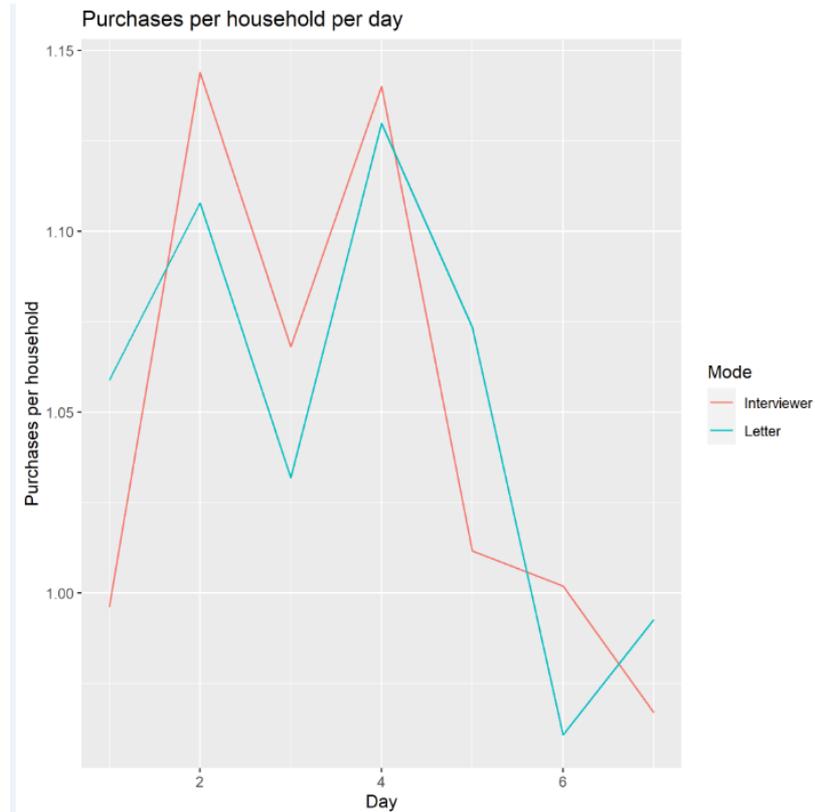
Motivation and involvement

- Pages per day



Motivation and involvement

- Entries per day



Data quality – Activity in app

	In-app editing Mean (SD)		No in-app editing Mean (SD)	
	Active	Scanned	Active	Scanned
Total	20.8 (11.8)	20.4 (12.9)	15.8 (11.1)	16.3 (11.4)
Scans	4.8 (6.3)	7.6 (6.4)	4.4 (6.8)	7.2 (7.4)
Manual	16.0 (13.1)	12.8 (11.0)	11.3 (10.1)	9.1 (8.2)



Data quality – In-app editing vs ‘the truth’

	Submitted by respondent	OCR
Correct amount	7.8%	2.7%
Difference amount \leq 1 Euro	63.9%	11.1%
Correct number of products	27.6%	16.1%
Difference number of products \leq 1	43.5%	45.5%
No zero amounts	38.0%	18.5%

Conclusion



Conclusion

- Give respondents the option to edit: Enabling in-app editing partially improves data quality
 - No effect on drop-out rates
- Challenge them to do more editing tasks
 - *While keeping an eye on whether respondents are doing this reliably*



Discussion

- Any experiences with active involvement in receipt scanning?
- Any experiences more generally with active involvement in text extraction?
- Where to set the boundary in active involvement (given the desire to ease tasks)?



Thank you!

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