ASSESSING THE EFFECT OF QUESTIONNAIRE DESIGN ON UNIT AND ITEM NONRESPONSE: EVIDENCE FROM AN ONLINE EXPERIMENT

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RESEARCH QUESTION, HYPOTHESES

Research questions:

- How different questionnaire design affect item- and unit NR?
- Which are those socio-demographic groups who are more sensitive for questionnaire design?

Hypotheses:

- H1.1. Offering a DK option increase the rate of item NR
- H1.2. Applying forced choice questions decrease the rate of item NR
- H1.3. Within a multiple answer question block, the check all that apply format increase the rate of item NR compared with forced-choice format
- H2.1. The expected results (see H1) are stronger within low education level respondents
- H2.2. … respondents with lower political interest
- H2.3. … older respondents
- H2.4. … respondents with low conscientiousness
- H3. Applying forced choice questions without DK option increase the rate of unit NR

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DATA

- Non-probability based online panel (opt-in)
- Quota sample
- Survey experiment
- 1000 respondents
- February 2019
- Questionnaire: ESS 8th wave – welfare block + political questions

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EXPERIMENTAL DESIGN

	Group1	Group2	Group3	Group4	Group5	Group6	Group7	Group8
Treatment1: Free vs. forced	forced	forced	free	free	forced	forced	free	free
Treatment2: No DK option vs. DK option offered	yes	yes	yes	yes	no	no	no	no
Treatment3: Forced choice format vs. Check-all-that-apply	CATA	forced	CATA	forced	CATA	forced	CATA	forced

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DEPENDENT VARIABLES ANALYSIS,

Dep1 – Number of item NR throughout the manipulated questions

Neg.binom. regression, AME

Dep2 – NR in the CATA/forced choice question block (binned, 0=mis, 1=no mis)

Loglin. regression, AME

Dep3 – Rate of unit NR

Chi-squared test

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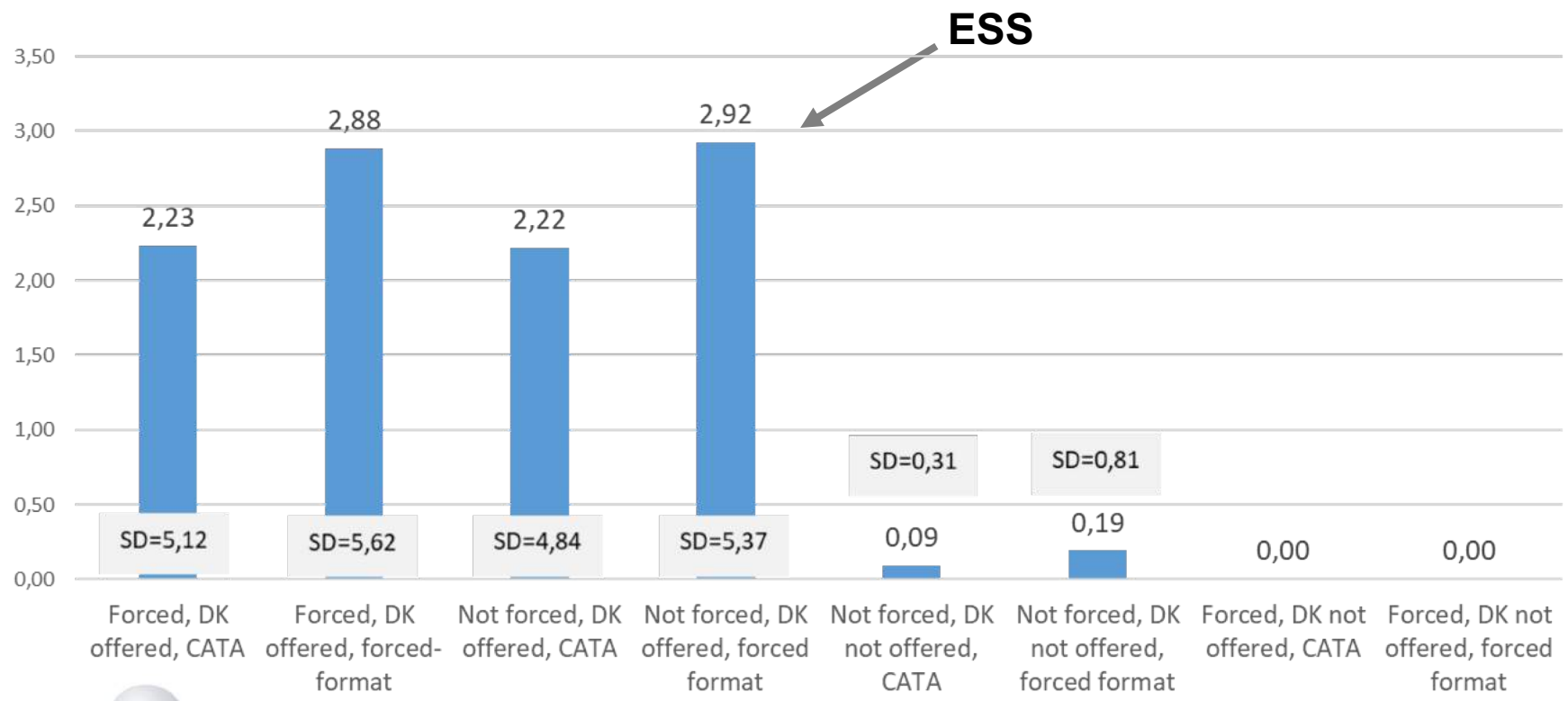
RESULTS – H1.1 – H.1.2

Means of item-nonresponse throughout the manipulated questions



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RESULTS – H1.1 – H.1.2

Negative binomial model predicting number of nonresponse throughout the manipulated questions

	Estimate	Standard Error	Odds Ratio	*p*-value
(Intercept)	-0.736	0.700	-1.051	0.293
Treatment1: Free vs. forced	-0.146	0.156	-0.939	0.348
Treatment2: No DK option vs. DK option offered	**2.444**	**0.225**	**10.881**	**<0.001**
Fill time	-0.004	0.006	-0.652	0.515
Gender	0.179	0.153	1.169	0.242
Age (in years)	0.001	0.006	0.128	0.898
Education level	0.056	0.085	0.656	0.512
Settlement type	0.036	0.068	0.538	0.590
Political interest level	**-0.552**	**0.087**	**-6.347**	**<0.001**
Device (big vs. small)	0.194	0.173	1.121	0.262
Conscientiousness (BF)	-0.186	0.114	-1.624	0.104
Dispersion coefficient	**0.457**			

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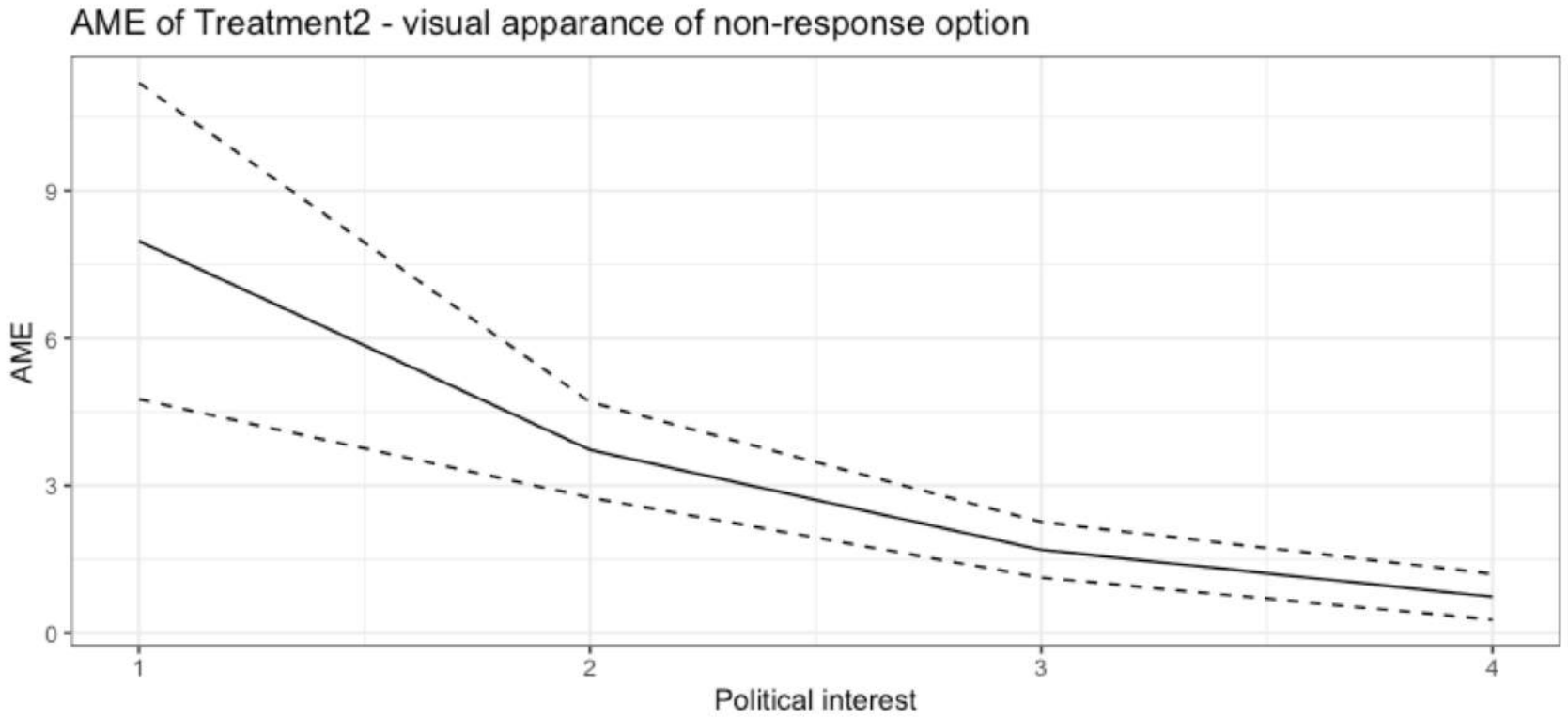
RESULTS – H1.1 – H.1.2

Average marginal effect of Treatment2 (DK offered or not) in the case of political interest (predicting number of nonresponse throughout the manipulated questions)



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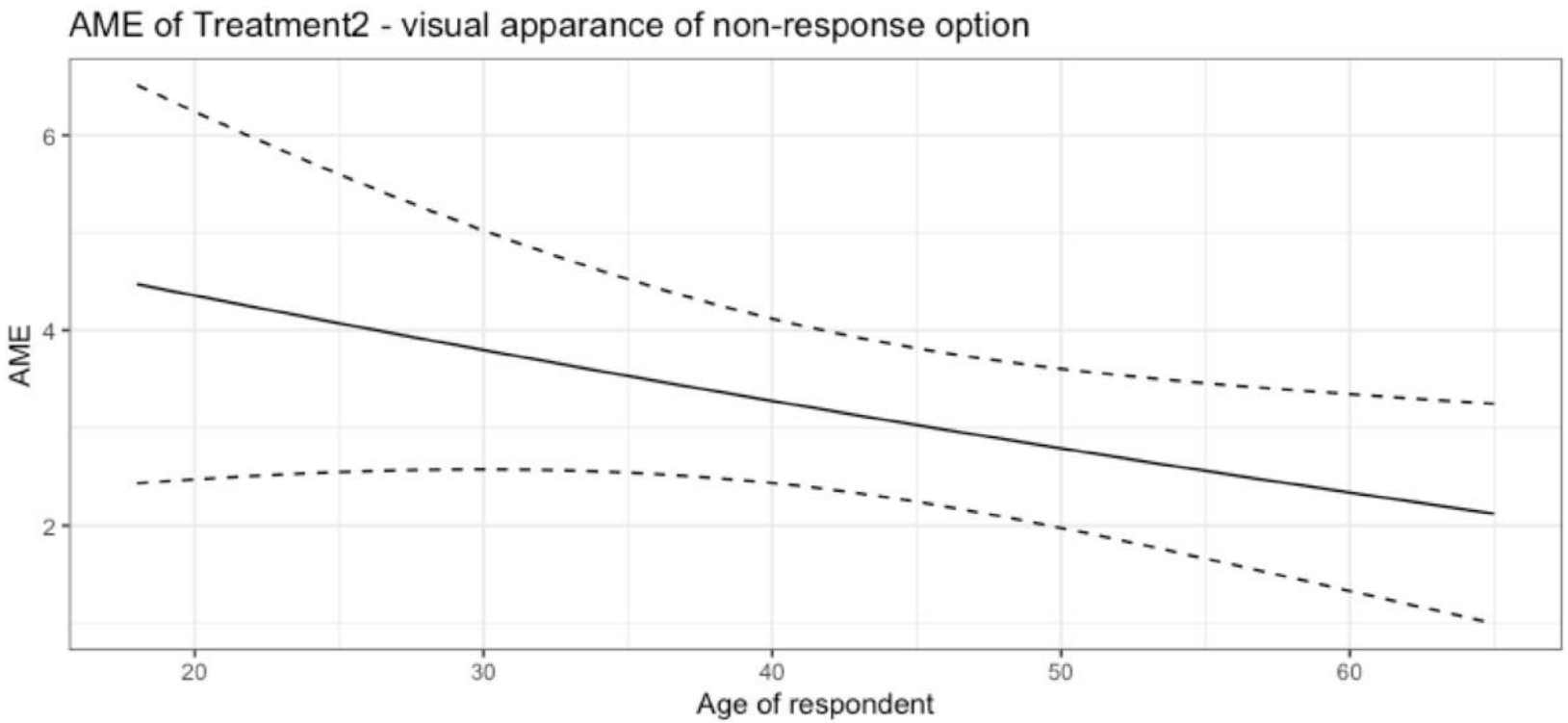
RESULTS – H1.1 – H.1.2

Average marginal effect of Treatment2 (DK offered or not) in the case of age (predicting number of nonresponse throughout the manipulated questions)



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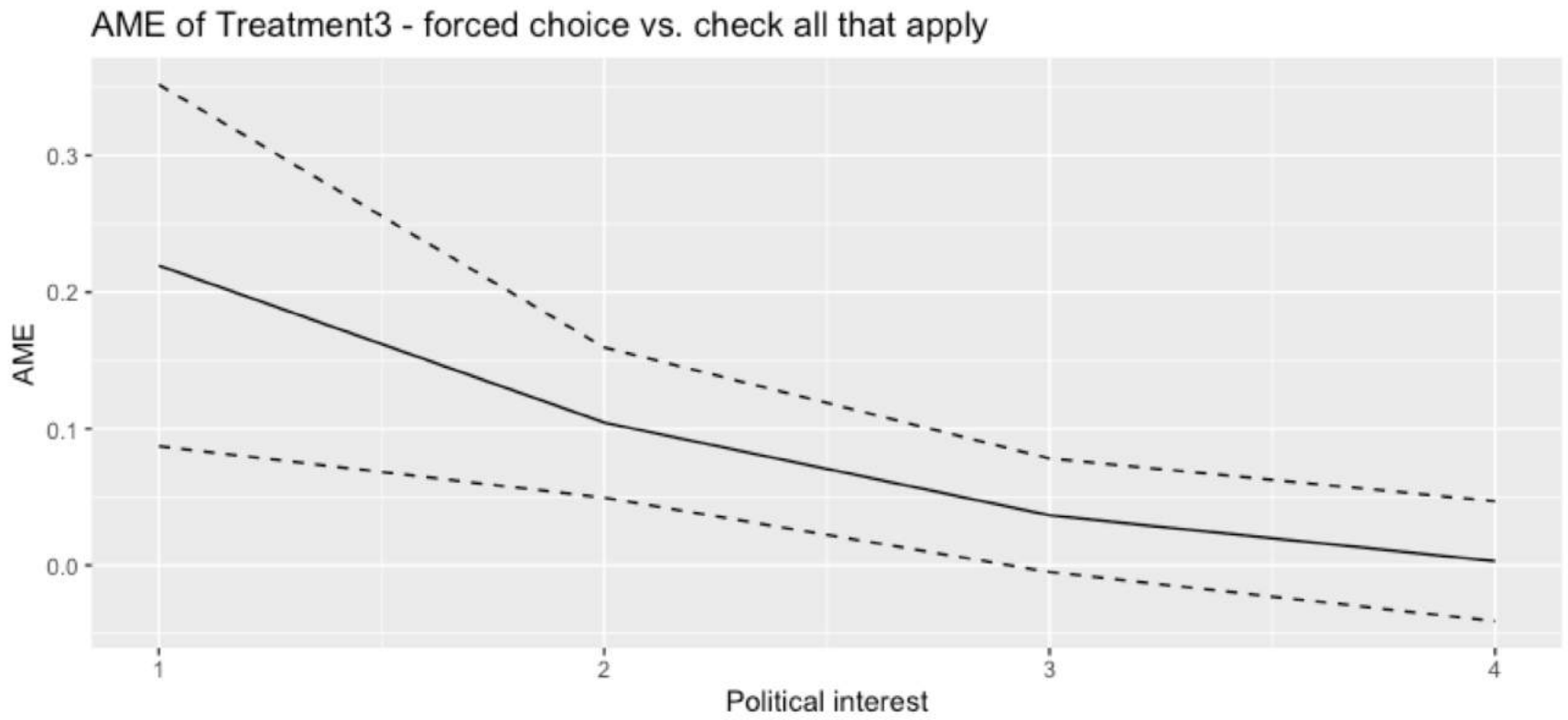
RESULTS – H1.3

Loglin model predicting nonresponse in the check-all that apply/forced choice question block (0=mis, 1=no mis)

	Estimate	Standard Error	Odds Ratio	*p*-value
(Intercept)	3.311	1.674	1.978	<0.05
Treatment1: Free vs. forced	0.462	0.359	1.285	0.199
Treatment2: No NR option vs. visual NR option	**-2.716**	**0.756**	**-3.593**	**<0.001**
Treatment3: Forced choice format vs. Check-all-that-apply	**1.739**	**0.431**	**4.036**	**<0.001**
Fill time	0.005	0.014	0.369	0.712
Gender	0.105	0.361	0.290	0.772
Age (in years)	-0.011	0.013	-0.850	0.395
Education level	-0.124	0.204	-0.608	0.543
Settlement type	0.022	0.164	0.134	0.894
Political interest level	**0.550**	**0.213**	**2.577**	**<0.01**
Device (big vs. small)	-0.713	0.398	-1.790	0.073
Conscientiousness (BF)	0.345	0.263	1.309	0.190

RESULTS – H1.3

Average marginal effect of Treatment3 (FC vs. CATA) in the case of political interest predicting nonresponse in the FC vs. CATA question block



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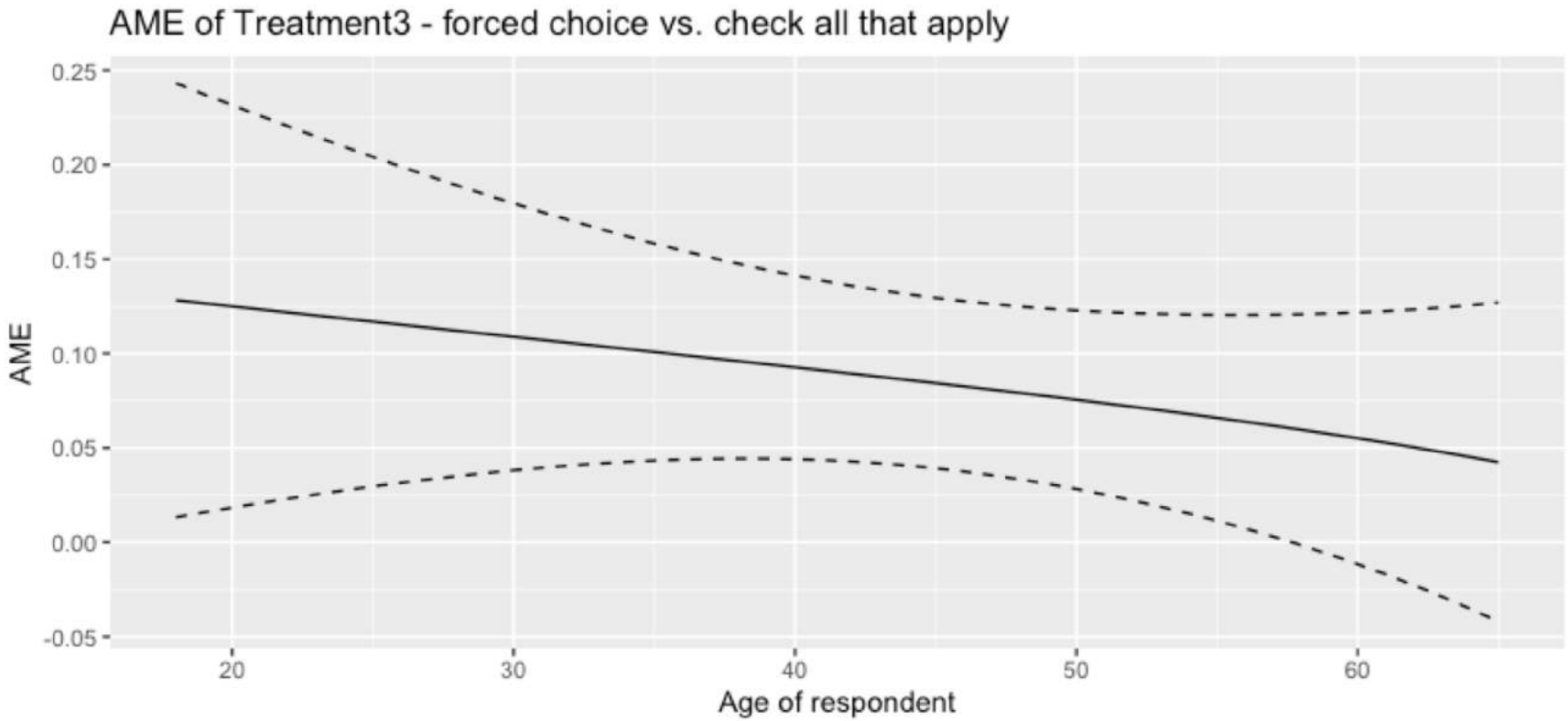
RESULTS – H1.3

Average marginal effect of Treatment3 (FC vs. CATA) in the case of age predicting nonresponse in the FC vs. CATA question block



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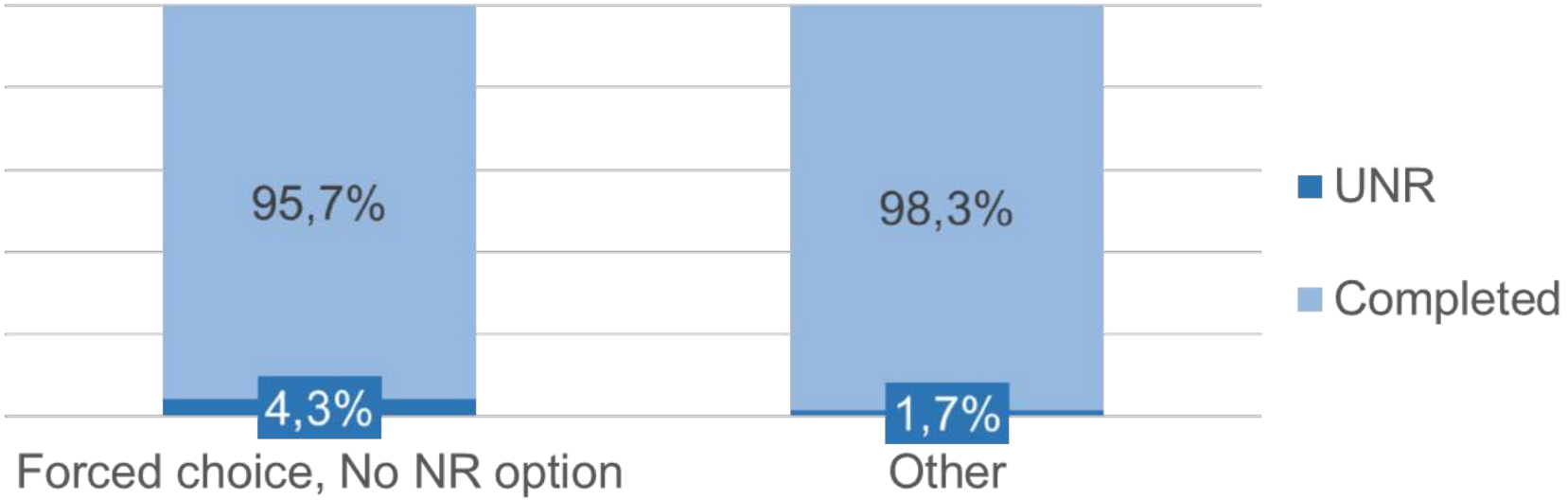
RESULTS – H3

The effect of forced choice questions without DK option



Chi-squared test:
p<0.05
CV=0.07

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CONCLUSION

- From a nonresponse point of view (!):
- Offering DK option is not recommended, unless it is very necesarry – significantly increases item NR
- While forcing respondents to answer without a DK option is not recommended neither – increases unit NR
- **Best choice - not offering DK option, but skipping is allowed**
- Mixed results on CATA vs. forced choice
- Questionnaire design does not affect everyone in the same way – **adaptive questionnaires**

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THANK YOU FOR YOUR ATTENTION!

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