



QUESTIONNAIRE SPLITTING DESIGN: EXPLORING THE OPTIMAL LENGTH AND TIME

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ESRA 2019 Conference
July 15-19, 2019
University of Zagreb, Croatia

OUTLINE

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INTRODUCTION

- Shorter surveys lead to higher response rates (Deutskens, de Ruyter, Wetzels, & Oosterveld, 2004; Liu & Wronski, 2018).
 - Not enough evidence about the ideal length of an online questionnaire.
- Different methods to create shorter survey instruments:
 - “shortening” (Maloney, Grawitch, & Barber, 2011; Mühlán, Bullinger, Power, & Schmidt, 2008)
 - matrix or sampling or split questionnaire design (SQD) (Herzog & Bachman, 1981; Raghunathan & Grizzle, 1995) .
 - Splitting the questionnaire to shorter sub-questionnaires (Andreadis & Kartsounidou, 2019; Galesic & Bosnjak, 2009)

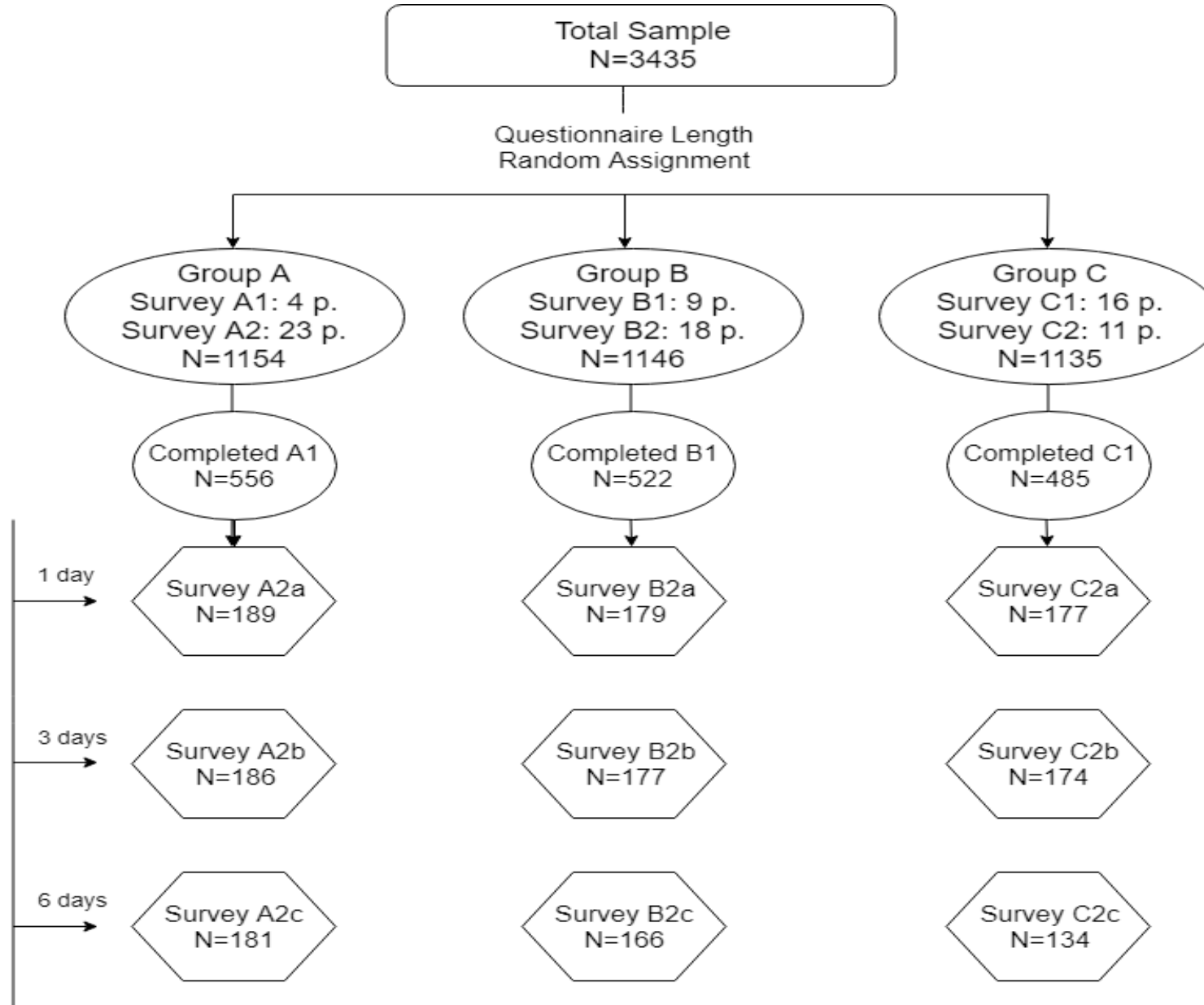
MAIN GOALS

- Add to the sparse knowledge on optimal questionnaire length and optimal interval time between sub-questionnaires, at which the data quality of the survey is maximized.
- Using a splitting questionnaire design, we aim to answer the following questions:
 - i) how long a sub-questionnaire should be?
 - ii) when is the right time to invite respondents to answer the second sub-questionnaire?

HYPOTHESES

- Given that lengthy online questionnaires lead to lower data quality (see, for instance, Crawford et al., 2001; Galesic, 2006; Galesic & Bosnjak, 2009; Marcus et al., 2007), we assume that shorter survey instruments will have higher response rate and higher response quality.
- **H1. The shorter the sub-questionnaire the higher the response rate.**
- **H2. The shorter the sub-questionnaire the higher the response quality.**
- Limited evidence on interval time between sub-questionnaires (Andreadis & Kartsounidou, 2019; Galesic & Bosnjak, 2009; Toepoel & Lugtig, 2018)
- **H3: Optimal break duration: within a period of one week.**

Break Duration
Random Assignment



THE EXPERIMENTAL DESIGN

- Web Experiment
- Mode: Web Survey on political attitudes, via <http://epolls.gr/>
- Sample: Panel members (volunteers)
- Data collection process: November 2018 - April 2019
- Number of contacts: 1

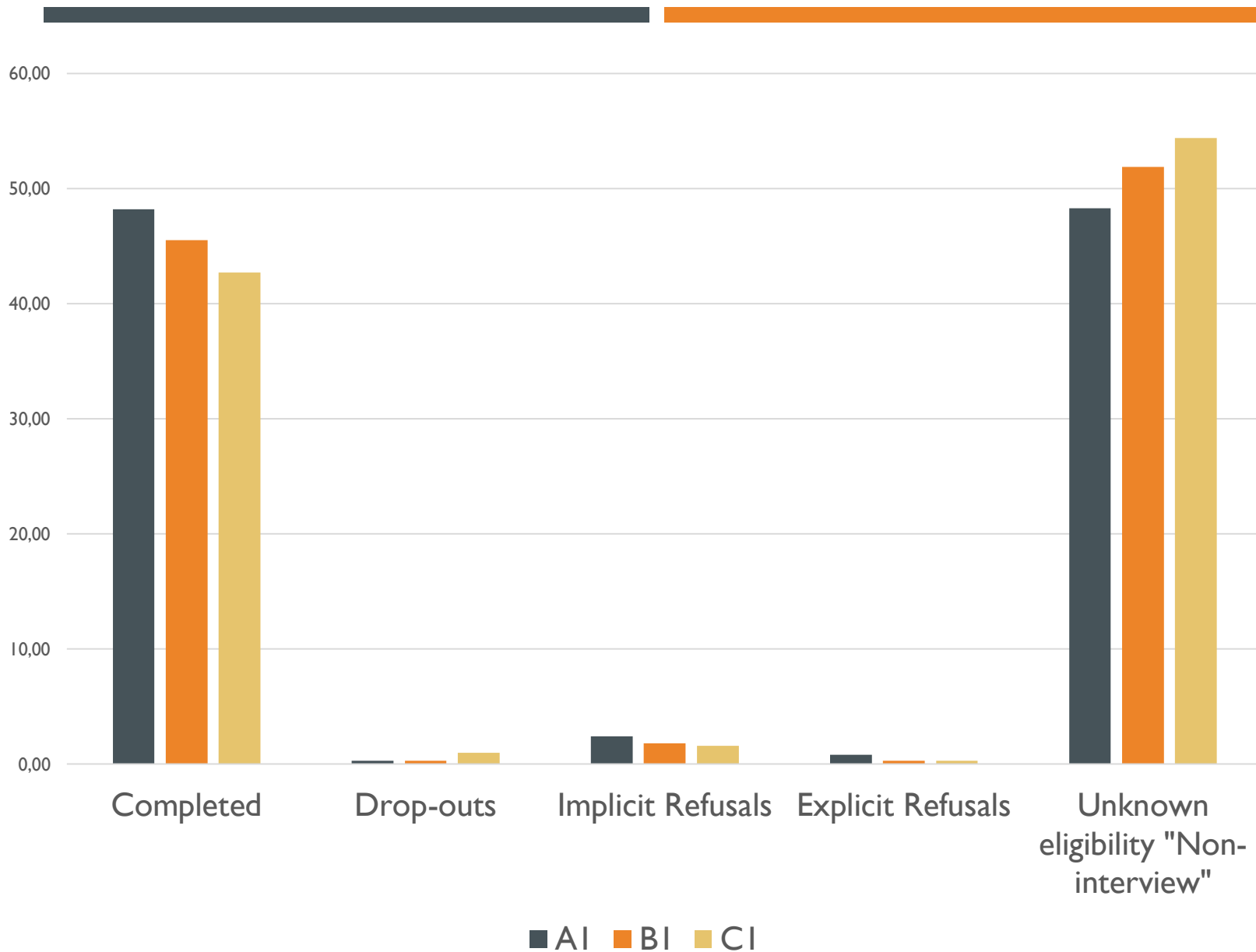
METHODS

- For H1 and H3: We compare three types of response behaviours:
 - completed questionnaires,
 - drop-outs and
 - Refusals
- For H2, we use three data quality indicators:
 - i) Speeding (If (Response time < Scanning threshold))
 - ii) mid-point responses (number of mid-points”/ “number of valid answers)
 - iii) item-nonresponse (Number of missing items/Total number of items)
- Response quality check: a set of seven attitudinal, Likert type scale questionnaire items, placed in the second sub-questionnaire of the three surveys.



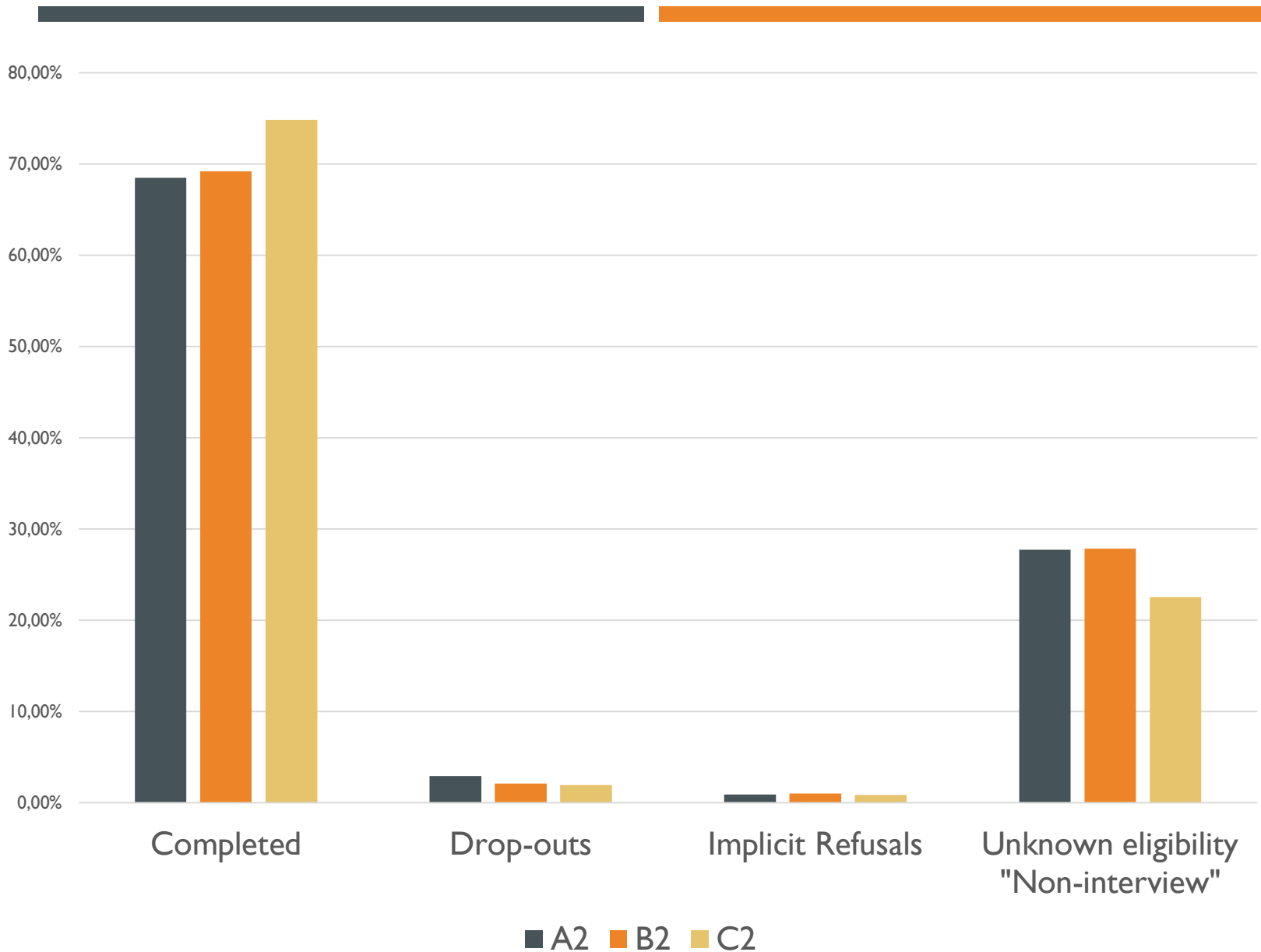
FINDINGS





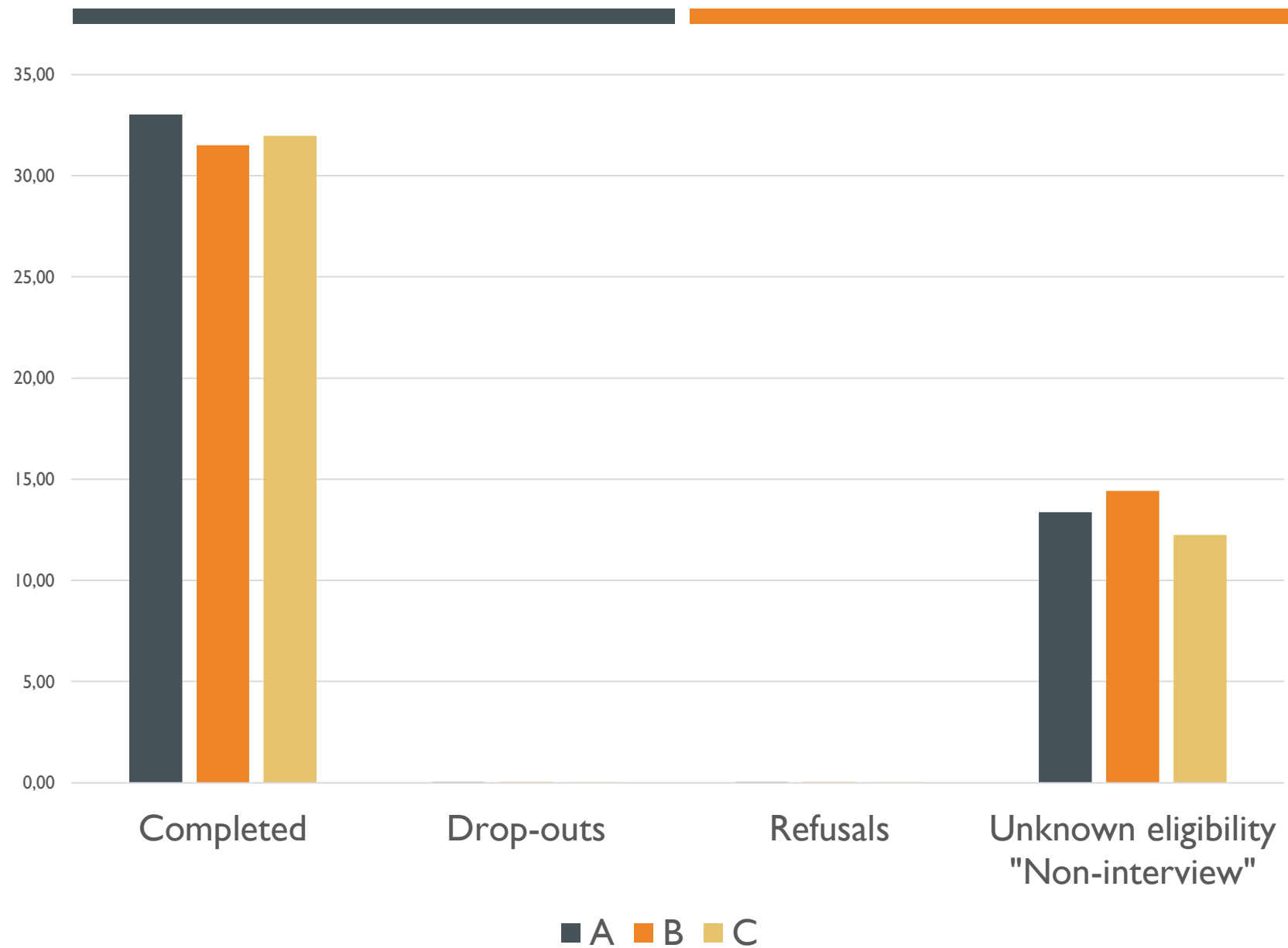
RESPONSE BEHAVIOURS IN SURVEYS AI, BI, AND CI

- The highest difference of completed questionnaires between Survey AI and Survey CI (6% points).
- (Pearson's Chi Square= 7.755, $p=0.051$)



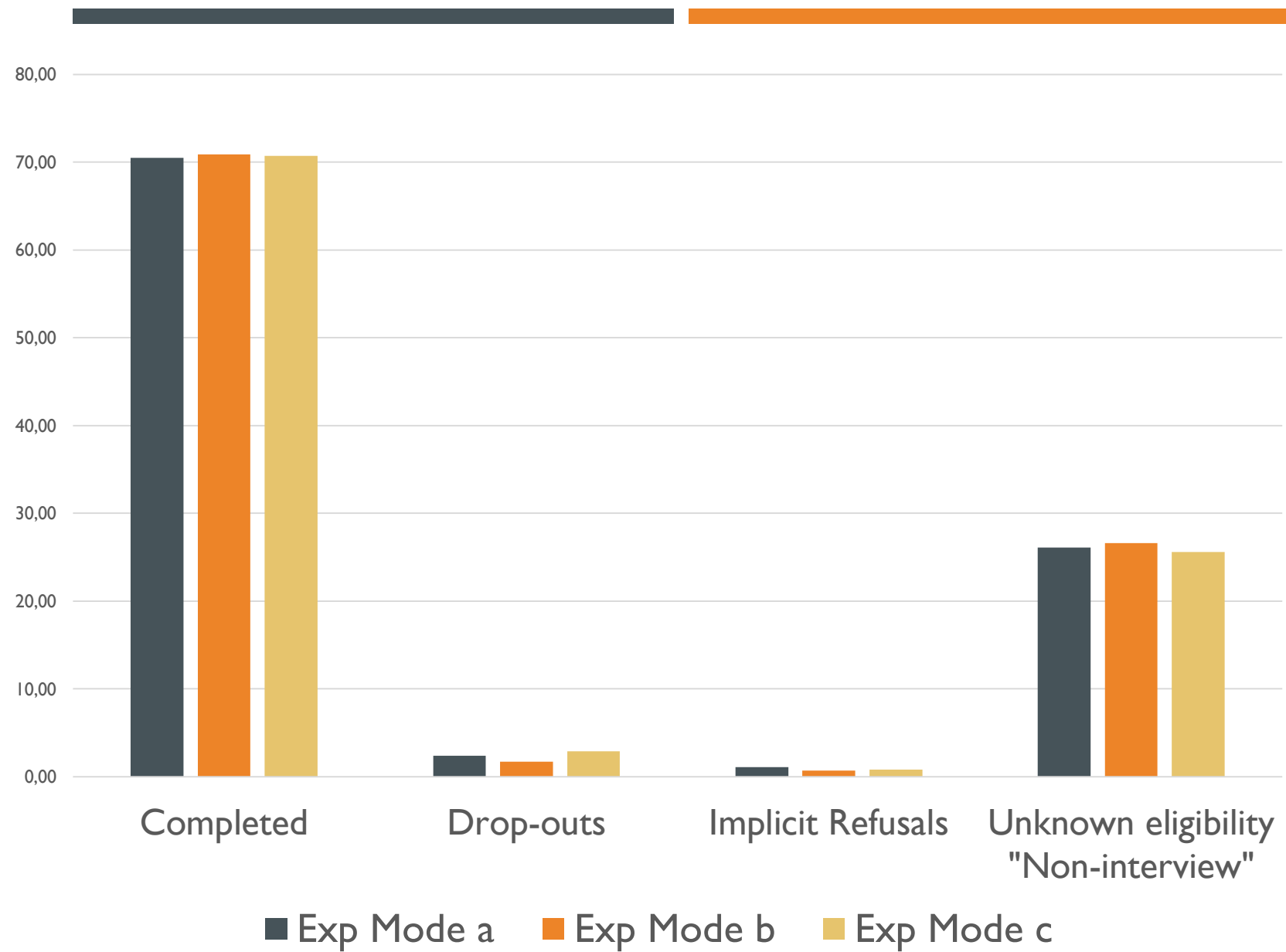
RESPONSE BEHAVIOURS IN SURVEYS A2, B2, AND C2

- The highest response rate is noticed in C2 (74.8%), which is the shortest questionnaire (11 pages).
- After Pearson's Chi-Square, not a significant difference in the distribution of responses between surveys .



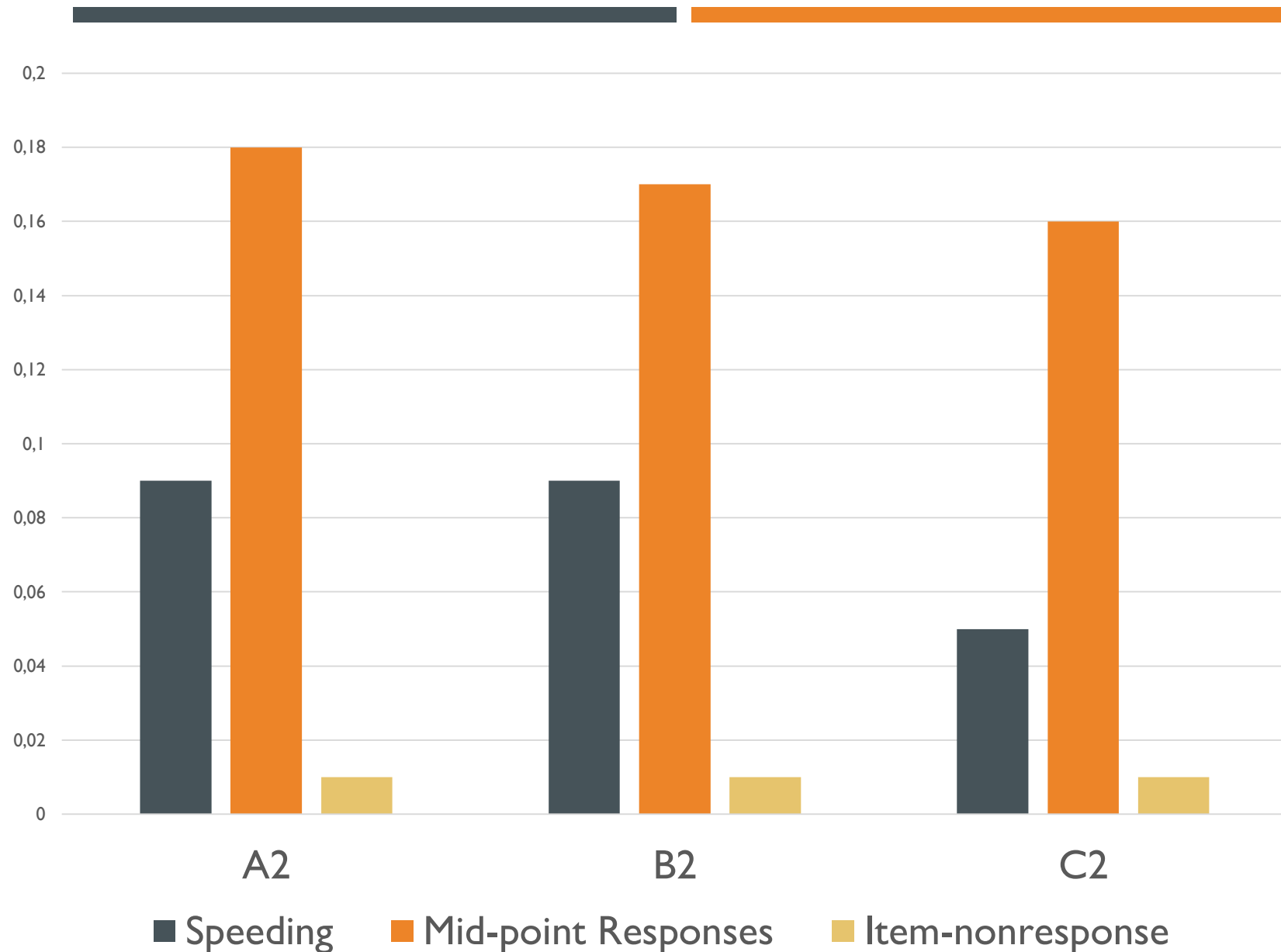
RESPONSE BEHAVIOURS IN COMPOSITE SURVEYS A, B, AND C

- The composite response rate of Survey A is slightly higher than the composite response rate of Survey B and Survey C.
- No significant differences among the three surveys.



RESPONSE BEHAVIOURS IN EXP MODES A, B, AND C

- No significant differences among the experimental modes, in terms of response rate.



RESPONSE QUALITY IN SURVEYS A2, B2, AND C2

- **Speeding:** In survey C2, the percentage of speeding is lower than in surveys A and B ($p= 0.001$).
- **Mid-Point:** No statistically significant differences among Surveys A, B, and C.
- **Item-nonresponse:** Extremely low percentage in all the three surveys.

DISCUSSION

- The questionnaire length affects the response rate. The shortest the survey the highest the response rate, observed both in the 1st and in the 2nd part of the surveys (H1).
- However, focusing on the questionnaire splitting design, the overall response rate of the survey is not affected considerably by the length of the first or the second sub-questionnaire.
- The break interval of one, three or six days, between two sub questionnaires does not affect the response behavior (H3).
- Response quality: the only indicator that differs considerably depending on the position of the questions in the questionnaire is the speeding.
 - More speeders in surveys A2 and B2 where the questionnaire is longer than in survey C2.
 - Mid-point responses and item nonresponse are more or less the same in the three surveys
- Further research is needed to define the optimal questionnaire length or interval time among sub-questionnaires.



THANK YOU FOR YOUR ATTENTION!
FEEDBACK? QUESTIONS?

