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Postscript to "Survey Participation in the Time of Corona"

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The analysis of "Survey Participation in the Time of Corona" is replicated by taking a more recent survey into account that was conducted one year later during the same period. The results clearly indicate that the temporary public shutdown in spring 2020 indeed boosted the panellists' participation at the initial stage of the survey.

Keywords: SARS-CoV-2, COVID-19, coronavirus pandemic, panel data, event history analysis, opportunity costs, paradata, replication online survey

1 Reasons for a replication

The motivation of our reanalysis relates to the fact that many research projects faced challenges in the context of the COVID-19 pandemic. Negative effects of the pandemic as well as associated consequences on the performance and outcomes of social-scientific surveys have been reported. Therefore, it has to be reanalysed whether the positive effect of public shutdown as an official non-pharmacological intervention (NPI) on survey participation in the DAB panel study (DAB, 2020) was a random exception or just an artefact. First, the result that the NPI boosted the panellists' participation at the initial stage of the survey may be related to the response behaviour of a "panelised" sample that survived across each of the panel waves. Second, it may be valid that our finding is singular for a special target population. It is possible that another target population might have responded quite differently. Third, the impact of the pandemic on survey participation caused by infection could not be observed directly for the non-respondents. Regardless of these issues, the design of our panel study allows us to reanalyse our finding by including information on participation in the subsequent survey conducted exactly one year later (May/June 2021). In contrast to the previous wave, the most restrictive NPI had ended just before the start of the most recent survey. Therefore, it is possible to test, using a very similar design, whether the COVID-19-related NPI in 2020 indeed resulted in an optimal exhaustion of the target sample.

Against the implicit theoretical and empirical background of survey participation, it is supposed that the response rate (indicated by the number of completed questionnaires versus the invitees' non-response across the fieldwork period) as well as the response speed (indicated by the latency between invitation and response) was significantly higher during the overlap of the fieldwork period with the NPI in May 2020 than in May 2021, which did not experience this unique overlap. However, it has to be emphasised that the features of the coronavirus pandemic were much more severe in the most recent wave. To give an example, the incidence rate (i.e. the number of infections per 100,000 citizens across seven days) was much higher in the initial stage of the most recent survey (161 cases at survey launch and 114 cases after two weeks) than in the previous survey during the period of the public shutdown (14 cases at survey launch and about one case two weeks later). In order to crystallise the "public shutdown effect" for the survey in 2020, the different characteristics of the coronavirus pandemic in Switzerland are therefore taken systematically into account in the multivariate reanalysis. In this respect, by considering the more serious circumstances of the pandemic in May 2021, the design of the replication is a strict retest of our previous finding.

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Editor's note: This article describes the results of a replication of the original research article published in this issue of *Survey Reseach Methods* (Becker, Möser, Moser, & Glauser, 2022b). The data for the replication became available after the production of the original paper. SRM publishes the results of the re-analysis as a postscript to the original paper, without full review. The complete manuscript of the extended version of the replication is online available (Becker, Möser, Moser, & Glauser, 2022a)

Table 1
Impact of the pandemic on survey participation in Wave 7 (May 2018), Wave 8 (May 2020) and Wave 9 (May 2021)

	Waves		
	8, 9 (1)	7, 8, 9 (2)	7, 8, 9 (3)
Time-varying covariates on different levels			
Micro: Wave 7 (vs Wave 9)	-	1.719***	−0.258***
	-	(0.102)	(0.035)
Micro: Wave 8 (vs Wave 9)	0.786***	0.784***	−0.850***
	(0.111)	(0.111)	(0.059)
Meso: Public shutdown (vs other periods)	0.534***	0.528***	1.258***
	(0.081)	(0.081)	(0.060)
Macro: Cases of illness per day/100	0.006***	0.006***	-
	(0.001)	(0.001)	-
Macro: Hospitalisations per day	0.029***	0.029***	-
	(0.002)	(0.002)	-
Macro: Number of deaths per day	0.072***	0.071***	-
	(0.007)	(0.007)	-
Social origin (Ref.: missing value)			
Upper service class	0.187**	0.204***	0.220***
	(0.065)	(0.054)	(0.054)
Lower service class	0.194**	0.212***	0.225***
	(0.062)	(0.051)	(0.051)
Routine non-manual employee	0.203***	0.193***	0.219***
	(0.059)	(0.049)	(0.049)
Farmer or small proprietor	0.160	0.184**	0.194**
	(0.082)	(0.069)	(0.069)
Foreman or skilled manual worker	0.055	0.057	0.060
	(0.065)	(0.054)	(0.054)
Semi-skilled or unskilled manual worker	0.085	0.081	0.089
	(0.089)	(0.074)	(0.074)
School type (Ref.: miscellaneous type)			
Basic requirements	−0.310	−0.294	−0.311
	(0.064)	(0.053)	(0.053)
Intermediate requirements	0.140*	0.209***	0.224***
	(0.057)	(0.048)	(0.048)
Baccalaureate schools	0.535***	0.635***	0.701***
	(0.061)	(0.051)	(0.051)
Individual characteristics			
Language proficiency	0.086***	0.120***	0.126***
	(0.019)	(0.016)	(0.016)
Female (vs male)	0.218***	0.259***	0.279***
	(0.034)	(0.028)	(0.028)
Constant	−5.075***	−5.144***	−3.466***
	(0.113)	(0.109)	(0.053)
Number of sub-episodes	56,906	90,674	90,674
Number of cases	4,806	7,299	7,299
Number of events	3,573	5,183	5,183
LR χ^2	1864	2314	1679
df	16	17	14

Coefficients estimated by exponential model (in parentheses: robust standard error).
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

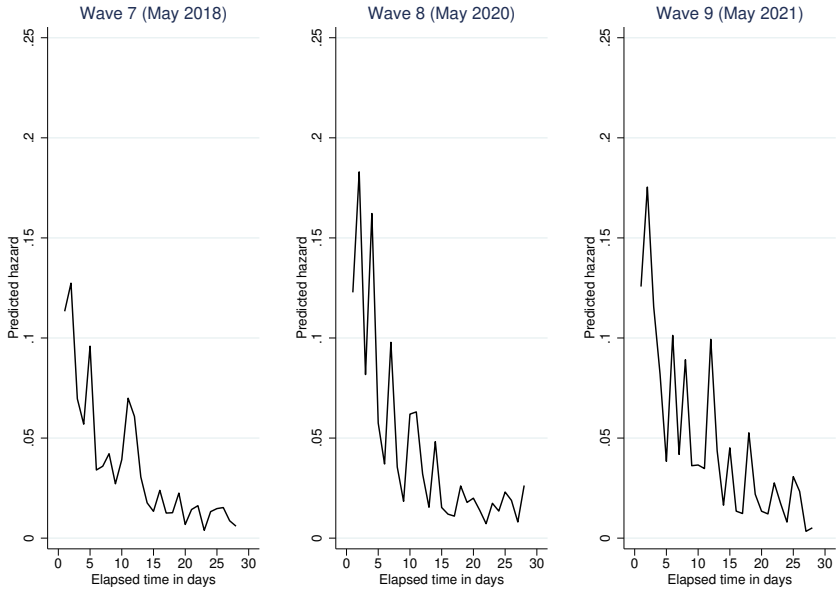

Figure 1. Period-specific hazard rates in Waves 7, 8 and 9

2 Information on the new data

In Wave 9, which took place over the same months one year later (May 2021), 2,313 panellists were eligible to be contacted. In this wave, for cost reasons, only the online questionnaire was offered since too few invitees had taken part in the CATI during the previous wave. About 82 per cent of the invitees responded to the online survey in May and June 2021. The same total response rate was realised in Wave 8. For the sake of comparison in our reanalysis, only the responses of the online mode within the first 28 days of the start of the fieldwork are considered in both surveys. It is worth noting that the invitees received a prepaid monetary incentive (10 Swiss Francs) from Wave 7 onwards.

3 Selected findings

The differences in period-specific responses across the three waves become obvious visually by estimating the hazard rates for each point in time at which responses took place (Figure 1). Focusing on the initial stage of the surveys, it is shown that the rate and speed of responses were higher in Wave 8 (middle panel) than in Wave 7 (left panel) and in Wave 9 (right panel). In sum, the results indicate that it is plausible to assume that the public shutdown (until 10 May 2020) in Wave 8 can be addressed as a major cause for these differences in the features of the fieldwork periods.

In order to substantiate this preliminary conclusion based on univariate hazard rates, multivariate models are estimated by taking time-varying covariates on the COVID-19 pandemic into account (Table 1). The effects of the panellists' characteristics are not interpreted, since they serve as a control. As a first step, the survey participation is analysed for both waves 8 and 9. By considering the features of the pandemic, it is revealed that the response rate was highest in the period of public shutdown (Model 1 & 2). Even when the pandemic was worse, its characteristics—indicated by the number of contagions, hospitalisations and fatalities per day—did not compromise the extraordinary response rate during the period of public shutdown. Even when the situation in Wave 7 is taken into account, this is especially true for the initial stage of Wave 8, which took place during the public shutdown period. The propensity for survey participation was about $(\exp(0.528) - 1) \cdot 100 = 70$ per cent higher during the shutdown period (11 days) compared to the other fieldwork periods (73 days in total).

In sum, controlling for measures indicating no pandemic situation in 2018 or different pandemic trajectories in 2020 and 2021, the effect of public shutdown on survey participation in May 2020 remains significant. Of course, one could assume that different developments of the pandemic might result in different features of the invitees' response across the waves. Therefore, as a second step, the panellists' propensity for survey participation is estimated without consideration of the pandemic features. It is found again that the public shutdown provide a strong positive effect on the survey participation in Wave 8 (Model 3).

4 Concluding remarks

Overall, our previous finding is replicated successfully. The NPI in spring 2020 pushed panellists to take part in the

initial stage of the survey. In our view, the positive and significant effect of the public shutdown on survey participation is obviously a real fact.

In a theoretical respect, it is assumed that, in the view of the panellists, a significant decrease of opportunity costs for survey participation and increased entertainment benefits during the hard times of "corona" might explain this phenomenon. After the end of the rigid NPI, the opportunity costs for survey participation might have increased again. Whether this assumption is valid cannot be proved yet due to missing information about the invitees' attitudes and values or cost–benefit assessment regarding their decision to participate in the survey. Without any mechanism-based identification of the panellists' decision-making process and other unobserved circumstances in their everyday life, the findings might be interpreted for the present in line with the "wide" version of rational choice theory.

Finally, although the effects of the pandemic and the NPI are positive for the response rate, the question is still open whether our finding is an exception among other cross-sectional surveys or longitudinal studies. It would be interesting, therefore, to find out whether the long-lasting time of Corona and the various NPIs have different impacts on different target populations in terms of survey participation and response pattern across the fieldwork period.

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