Table A1: Characteristics of included studies

#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
1	Callegaro et al. (2009)	Response latency as an indicator of optimizing in online questionnaires	Data from job incumbents and job applicants in the United States, who completed a 311-item employee-selection questionnaire	$N = 909$; nonprobability sampling	Response time per item	*For multiple-choice items:* Bottom limit at 2 seconds and top limit at 50 seconds. *For Likert items:* Top limit at 20 seconds	Excluded from analysis	Not reported	Linked response time with the optimising/satisficing paradigm and demonstrated that response times can be another tool for studying and identifying optimising/satisficing strategies as well as for assessing the quality of data collected with surveys and questionnaires.

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
2	Christian et al. (2009)	Designing scalar questions for web surveys	Two web surveys of undergraduate students at Washington State University	$N_1 = 1591$, $N_2 = 1565$; probability sampling	Response time per item	*Bottom and top:* $\pm$ 2 standard deviations from the mean	Excluded from analysis	Not reported	Not researched
3	Conrad et al. (2017)	Reducing speeding in web surveys by providing immediate feedback	Six web survey experiments	$N_1 = 2463$, $N_2 = 2453$, $N_3 = 3046$, $N_4 = 2565$, $N_5 = 929$, $N_6 = 913$; probability sampling	Response time per item	*Bottom:* Below 350 milliseconds per word	Analysed	The percentages of control respondents who sped at least one time in the six experiments were 85%, 82%, 42%, 74%, 37% and 53%	The reduction in speeding was associated with some evidence of improved response quality, namely increased response accuracy
4	Couper et al. (2006)	Evaluating the effectiveness of visual analog scales: A web experiment	Two sample sources were used: Survey Sampling International's Survey Spot and America Online's Opinion Place	$N_1 = 1427$, $N_2 = 1290$; nonprobability sampling	Response time per item	*Top:* More than 6 times the average time spent on the other questions	Excluded from analysis	2	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
5	Funke et al. (2011)	Sliders for the smart: Type of rating scale on the web interacts with educational level	Survey on health-related products	$N = 779$; nonprobability sampling	Experiment completion time	*Bottom and top:* $\pm$ 1.5 interquartile range	Excluded from analysis	7	Not researched
6	Funke (2016)	A web experiment showing negative effects of slider scales compared to visual analogue scales and radio button scales	Questionnaire on study satisfaction Students at 18 different universities of applied sciences in Germany	$N = 1650$; probability sampling	Response time per response scale	*Bottom and top:* $\pm$ 2.5 interquartile range	Excluded (temporarily) from analysis	3	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
7	Greszki et al. (2015)	Exploring the effects of removing "too fast" responses and respondents from web surveys	Data from a series of nine quarterly gathered online surveys as part of the German Longitudinal Election Study	$N_{t13} = 1137$; nonprobability sampling	Response time per page Response time per item	*Bottom:* Speeder index based on median completion time per page; three thresholds for defining speeders: 30%, 40% and 50% faster than the median completion time *Top:* Reading rate: 7.5 words per second	Analysed	The 50% threshold excludes, on average, 9 percent. The 40% threshold excludes, on average, 14 percent, whereas the 30% threshold excludes 20 percent.	Small effects of speeder corrections on substantive findings suggest that speeding, by and large, adds some kind of random noise to the data. Removing these answers does not change marginal distributions and tends to increase correlations, if it makes any difference at all.

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
8	Gummer and Roßmann (2015)	Explaining interview duration in web surveys: A multilevel approach	Pooled data of 21 web surveys on political attitudes and behaviour	$N = 24\,273$; nonprobability and probability sampling	Interview duration	*Bottom and top:* 1st percentile and 99th percentile	Excluded from analysis	2	Not researched
9	Harms et al. (2017)	Reliability and completion speed in online questionnaires under consideration of personality	Questionnaire of 90 personality items	$N = 532$; nonprobability sampling	Survey completion time	*Bottom and top:* 5th percentile and 95th percentile	Excluded from analysis	10	Response time by itself is not an indicator of data quality (at least in terms of internal consistencies)
10	Healey (2007)	Drop downs and scroll mice: The effect of response option format and input mechanism employed on data quality in web surveys	Sample of individuals from the New Zealand electoral roll	$N = 560$; probability sampling	Survey completion time Response time per page Response time per item	*For survey completion time:* Bottom at 5 minutes and top at 60 minutes *For survey item:* Bottom at 1 minute and top at 20 minutes	Excluded from analysis	7	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
11	Heerwegh (2003)	Explaining response latencies and changing answers using client-side paradata from a web survey	Web survey of different topics (Euro currency, computer and internet use and attitudes towards the government, politics and immigrants)	$N = 3094$; probability sampling	Response time per survey and response time per knowledge question	*Bottom and top:* $\pm$ 2 standard deviations from the mean response time	Excluded from analysis	2	Not researched
12	Heerwegh and Loosveldt (2006)	An experimental study on the effects of personalization, survey length statements, progress indicators, and survey sponsor logos in web surveys	Official database of all first-year students of the Katholieke Universiteit Leuven, Belgium	$N = 2520$; probability sampling	Survey completion time	*Bottom and top:* $\pm$ 2 standard deviations from the mean	Excluded from analysis	Not reported	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
13	Lenzner et al. (2010)	Cognitive burden of survey questions and response times: A psycholinguistic experiment	Online access panel Sozioland	$N = 1002$; probability sampling	Survey completion time	*Bottom and top:* 1st percentile and 99th percentile	Excluded from analysis	2	No correlation was found between very short response time and survey satisficing
14	Mahon-Haft and Dillman (2010)	Does visual appeal matter? Effects of web survey aesthetics on survey quality	Two web panels: The instrument was a web-based Student Experience Survey assessing undergraduate student experiences at Washington State University	$N = 640$; probability sampling	Response time per page	*Top:* 2 standard deviations above the mean completion time for particular question screen	Excluded from analysis	Not reported	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
15	Malhotra (2008)	Completion time and response order effects in web surveys	Survey experiment on attitudes towards the government response to Hurricane Katrina in the city of New Orleans	$N = 397$; probability sampling	Survey completion time	*Top:* Natural logs and 1 standard deviation above mean completion time	Excluded from analysis	3	Respondents with relatively lower cognitive skills who take less time to complete web surveys satisfice and produce lower quality data in the form of order effects
16	Meade and Craig (2012)	Identifying careless responses in survey data	Web survey of students enrolled in introductory psychology courses at a large university in the southeastern United States	$N = 386$; nonprobability sampling	Response time per page	*Top:* 15 minutes	Set as missing values	Not reported	Response time will effectively screen out some careless responders, although further research is needed to determine the effects of remaining careless responders on data properties

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
17	Naemi et al. (2009)	Personality predictors of extreme response style	The study sample consisted of undergraduates at a large southern university (primary participants), matched with close friends	$N = 132$; nonprobability sampling	Survey completion time	*Top:* 3 standard deviations above the mean	Excluded from analysis	7	Response time by itself is not an indicator of extreme response style

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
18	Revilla and Ochoa (2015)	What are the links in a web survey among response time, quality, and auto-evaluation of the efforts done?	Data from the web panel Netquest; the survey selected has been proposed to panellists in Spain, Mexico and Colombia	$N_1 = 345$, $N_2 = 305$, $N_3 = 336$; nonprobability sampling	Response time per page	*Top:* 99th percentile	Substituted with the average time spent by the other 99% on answering the questions on that same page	3	There is a weak link between response time and quality; a worse quality of answers is directly related to shorter response time—that is, with more speeding. The authors could not conclude that response time can be used as a proxy of quality. Response time can be used, as is already done by many companies, to exclude some clear speeders. But response time is imperfectly linked with quality, so we should not give it too much importance by itself.

#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
19	Roßmann and Gummer (2016)	Using paradata to predict and correct for panel attrition	Data from a seven-wave web-based panel survey (German Longitudinal Election Study)	$N = 5256$; nonprobability sampling	Response time per page	*Bottom and top:* Response speed index (respondents with index values that are more than 2 standard deviations below or above the mean)	Analysed	Not reported	Not researched
20	Sauer et al. (2011)	The application of factorial surveys in general population samples: The effects of respondent age and education on response times and response consistency	General population survey conducted to study method issues in factorial survey design	$N = 1634$; probability sampling	Response time per page	*Top:* 99th percentile and 1 standard deviation above the mean	Excluded from analysis	Not reported	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
21	Sendelbah et al. (2016)	Investigating respondent multitasking in web surveys using paradata	Web survey of students from the University of Ljubljana who studied in foreign universities as part of a student exchange programme	$N = 313$; nonprobability sampling	Survey completion time	*Top:* +5 median absolute deviation	Excluded from analysis	4	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
22	Smyth et al. (2006)	Comparing check-all and forced-choice question formats in web surveys	Two web surveys and one paper survey, all designed to assess the undergraduate experience at Washington State University	$N_1 = 1591$, $N_2 = 1705$; probability sampling	Response time per page	*Top:* 2 standard deviations above the mean	Excluded from analysis	Not reported	Respondents who answered check-all questions quickly marked significantly fewer options and appear to have employed a weak satisficing response strategy (as evidenced by patterns of primacy), more so than their counterparts who answered these questions more slowly

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
23	Smyth et al. (2009)	Open-ended questions in web surveys: Can increasing the size of answer boxes and providing extra verbal instructions improve response quality?	Three web surveys of undergraduate students about their student experience at Washington State University	$N_1 = 1528$, $N_2 = 1054$, $N_3 = 1369$; probability sampling	Response time per page	*Top:* 2 standard deviations above the mean	Excluded from analysis	Not reported	Not researched
24	Stieger and Reips (2010)	What are participants doing while filling in an online questionnaire: A paradata collection tool and an empirical study	Online questionnaire about instant messaging	$N = 1046$; nonprobability sampling	Response time per item	*Bottom:* 1–3 seconds for simple questions *Top:* 5 minutes	Analysed	*Bottom:* 46% *Top:* 3.6%	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
25	Tijdens (2014)	Dropout rates and response times of an occupation search tree in a web survey	Second quarter wage indicator web survey in the United Kingdom, Belgium (Dutch and French) and the Netherlands	$N = 22\,990$; nonprobability sampling	Response time per page	*Top:* Natural logs and top 99.9th percentile	Excluded from analysis	0.1	Response time in each step of the search tree is related to the search tree item length or to the respondent's valid self-identification and dropout in the next step. The response time increases with search tree item length, next-step dropout, invalid self-identification, higher age and lower education, but it is not affected by employment status.

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
26	Yan and Tourangeau (2008)	Fast times and easy questions: The effects of age, experience and question complexity on web survey response times	Four web surveys conducted by MSInteractive	$N_1 = 2568$, $N_2 = 2722$, $N_3 = 2717$, $N_4 = 2587$; nonprobability sampling	Response time per item	*Bottom and top:* 1st percentile and 99th percentile	Excluded from analysis	2	Increases in response times do not necessarily signal increased difficulty or decrements in data quality
27	Yan et al. (2010)	Should I stay or should I go: The effects of progress feedback, promised task duration, and length of questionnaire on completing web surveys	Web survey carried out by Market Strategies Inc. based on a sample from Survey Sampling Inc.	$N = 2385$; nonprobability sampling	Survey completion time	*Top:* 90th percentile	Substituted with the 90th percentile value	10	Not researched

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#	Author(s) and year	Title	Study design	Sample	Level of time measurement	Approaches and time limits	Treatment of outliers	% of detected/deleted response time outliers	Correlation between response quality and response time
28	Zhang and Conrad (2014)	Speeding in web surveys: The tendency to answer very fast and its association with straightlining	Politics and Values Survey conducted by the Measurement and Experimentation in the Social Sciences project and administered to probability-based Longitudinal Internet Studies for the Social sciences panel	$N = 5523$; probability sampling	Response time per item	*Bottom:* Below 300 milliseconds per word	Analysed	Percentage of persistent speeders dropped from over 40% among those aged 18–34 to less than 5% among those aged 65 and above	Positive correlation between speeding and straightlining