methods, data, analyses | 2025, pp. 1-30 DOI: 10.12758/mda.2025.10

A Survey Mode of the Future? Investigating Respondents' Willingness to Participate in Self-Administered Video-Based Web Surveys

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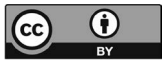
Abstract

Web surveys convince through low costs, save interviewer time, and provide respondents with a high level of flexibility, but often struggle with achieving high response rates and data quality. One way to mitigate these problems might be to conduct video-based web surveys, in which at least one of the two interview components (i.e., questions or answers) is based on video communication technology. However, few studies have investigated respondents' willingness to participate in such web surveys. Therefore, we examine the extent to which respondents are willing to participate in video-based web surveys and the reasons for their hypothetical (non)willingness. This also includes the investigation of characteristics of respondents and video-based web surveys that are associated with (non)willingness. The results of two experimental web surveys conducted in non-probability online panels in Germany reveal that a majority of respondents is willing to participate in web surveys with video-based questions and predefined answer options or open textual answers. Less respondents are willing to participate in web surveys with voice or video-based answers. While respondents mostly mention convenience and time flexibility as reasons for their willingness, the main reasons given for their nonwillingness are excessive effort regarding video-based questions and privacy and data security concerns regarding video-based answers. Video-based web surveys generally appeal to younger, male, and extraverted respondents as well as respondents who rate the survey as more interesting. This article provides researchers and practitioners with new insights into respondents' hypothetical willingness when it comes to video-based web surveys, including empirical-driven survey design recommendations.

Keywords: automatic question reading, pre-recorded interviewers, respondent willingness, self-recording answers, web surveys



For a long-time, face-to-face interviews were described as the "gold-standard" of data collection in social science and market research because they are characterized by unique strengths, such as allowing interviewers to build rapport with respondents, engage in dynamic social interactions, and motivate respondents to put effort into question answering (Schober, 2018). In the past two decades, and particularly in the wake of the COVID-19 pandemic, web surveys have replaced face-to-face interviews as a predominant data collection method. Web surveys are associated with many advantages. For example, this includes the absence of constraints regarding survey location as well as significant time and cost savings (Callegaro et al., 2015). However, web surveys frequently struggle with achieving high response rates (Daikeler et al., 2020), collecting high-quality data (Silber et al., 2019), and including respondents with literacy difficulties (Bauer et al., 2025). One way to mitigate these problems might be to incorporate elements of face-to-face interviews into web surveys using video communication technology.

Specifically, this can be done by delivering (all) questions of a web survey via pre-recorded videos (Conrad et al., 2023) and/or having respondents answer via self-recorded videos (Höhne et al., 2023). We refer to this method as "video-based web survey" and define it as web surveys in which at least one of the interview components (i.e., questions or answers) is video-based. Importantly, video-based web surveys are self-administered and asynchronous. They are not to be confused with live video interviews, which are based on a synchronous and video-mediated interaction between interviewers and respondents (West et al., 2022). Compared to traditional web surveys and face-to-face interviews, video-based web surveys are promising in at least four respects: First, they resemble human-like conversations, possibly reducing respondent burden and improving overall data quality (Sun et al., 2021; West et al., 2022). Second, video-based questions and answers facilitate the participation for respondents with literacy difficulties (i.e., respondents who have difficulty reading survey questions or providing open textual answers), which can ultimately contribute to more inclusiveness in terms of web survey participation. Third, if the answer component is video-based, respondents' answers allow researchers to analyze rich tonal, facial, and gestural data to learn about data quality and answer behavior (e.g., respondents' interest and engagement; see Höhne, Kern, et al., 2024). Fourth, compared to interviewer-administered surveys (i.e., face-to-face, live video, and telephone interviews), the asynchronous communication associated with video-based web surveys provides respondents with more flexibility, while being cost- and time-efficient (e.g., no in-person contact approach is required).

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Despite the promising combination of web surveys with elements of face-to-face interviews through video communication technology, there has been little research on video-based web surveys. Importantly, there is limited knowledge about the share of respondents who are willing to participate in video-based web surveys and what conditions drive willingness. In addition, many existing studies have applied observational (or non-experimental) research designs (Höhne et al., 2023; Schober et al., 2023). In the present article, we address this research gap by experimentally investigating respondents' hypothetical willingness to participate in video-based web surveys using survey data from two non-probability online panels in Germany. We also employ follow-up probes asking respondents to elaborate on their (non)willingness and examine characteristics of respondents (e.g., age and education) and video-based web surveys (e.g., video-based answers) that are associated with (non)willingness.

Background and Research Questions

Empirical studies on video-based web surveys are rare and focus on question delivery rather than answer provision. Importantly, video-based questions can be delivered by both pre-recorded (human) interviewers as well as (artificial) virtual interviewers. A few studies have examined the data quality of web surveys with pre-recorded interviewers in comparison to text-only web surveys, face-to-face, live video, and telephone interviews. The results are somewhat mixed. While one study found less information disclosure in a web survey with pre-recorded interviewer videos than in a text-only web survey (Fuchs, 2009), other studies did not find any disclosure differences (Fuchs & Funke, 2007, 2009). Conrad et al. (2023) found less rounding in open numeric answers and more disclosure of sensitive information in a web survey with pre-recorded interviewers compared to a text-only web survey. In addition, in the study by Conrad et al. (2023), about 70% of respondents declared that they have built a connection with the pre-recorded interviewer. Furthermore, Haan et al. (2017) reported that web surveys with pre-recorded interviewers result in less socially desirable answers than face-to-face and telephone interviews. Recency effects, as an indicator of survey-satisficing, were less common in web surveys with pre-recorded interviewers than in telephone interviews. Finally, it was recently shown that if interviewer effects occur, they tend to be larger in live video interviews than in web surveys with pre-recorded interviewers (West et al., 2022; see Table 1 for a systematic outline of studies). These findings point to data quality benefits when it comes to web surveys with pre-recorded interviewers.

With respect to virtual interviewers, Conrad et al. (2015) discovered that those with advanced dialog capabilities, as opposed to virtual interviewers with limited dialog capabilities, elicited more precise responses. Respondents interacted

in a more social way, maintained more eye contact, asked more frequently for clarifications, and rated the virtual interviewers as more personal and less distant when they included advanced dialog capabilities. For virtual interviewers with greater facial animation, respondents showed a somewhat higher level of engagement (Conrad et al., 2015). Conrad et al. (2020) reported a decrease in socially desirable responding when the demographic characteristics of the respondent and virtual interviewers matched. When respondents shared the same ethnicity as the virtual interviewers, they were more inclined to report being slightly overweight, which is considered a socially undesirable answer, compared to when respondents did not share the same ethnicity. These findings indicate that video-based web surveys may emulate human-like conversations, possibly improving data quality.

Following the so-called "uses and gratification" theory, we assume that videos, as a specific media type, can serve the gratification of individual needs (Katz et al. 1973; Montag et al. 2021). In line with this assumption, respondents' willingness depends on whether video-based web surveys align with respondents' needs, such as convenience, self-expression, and social interaction. The extent to which these needs are gratified serves as a rationale for explaining individual differences in willingness. For example, the extent to which video-based questions are perceived as convenient might be related to respondents' age. Older respondents may have visual impairments, which impedes question reading. Similarly, the extent to which respondents conceive video-based answers as a positive form of self-expression might be related to their level of extraversion. Since we take an exploratory approach in this article, we refrain from formulating specific research hypotheses. The uses and gratification theory rather serves as a general framework underlining potential differences in respondents' willingness to participate in video-based web surveys.

To the best of our knowledge, only two empirical studies have been published on respondents' willingness to participate in video-based web surveys so far (see Höhne et al., 2023, and Schober et al., 2023). Schober et al. (2023) found that the majority of respondents (63%) is willing to participate in web surveys with video-based questions. This corresponds to the findings reported by Höhne et al. (2023). However, the latter study also reported that only about 20% of respondents are willing to participate in web surveys with video-based answers and that willingness depends on various aspects, such as respondents' belief that technology facilitates communication, their interest in the survey, and their level of extraversion. These studies provide novel insights on the share of respondents who are willing to participate in video-based web surveys, including potential drivers of willingness. However, there is less knowledge on the characteristics of video-based web surveys driving respondents' willingness.

The discrepancy between respondents' comparatively high willingness to participate in web surveys with video-based questions and their comparatively

low willingness to participate in web surveys with video-based answers is striking. It suggests that respondents' willingness to participate in video-based web surveys is not only associated with respondent characteristics, such as attitudes on technology and personality traits, but also with the answer component. In particular, the answer component of video-based web surveys can range from selecting predefined answer options to open textual answers to voice and video-based answers. Thus, willingness to participate in video-based web surveys might differ substantially across respondent groups. On the one hand, respondents might be less willing to participate in such web surveys if the answer component is considered as burdensome or inconvenient. This may particularly apply if the answer component is not video-based. For example, open textual answers require respondents to retrieve information from memory without a frame of reference in the form of predefined answer options (Zuell et al., 2015). Respondents need to formulate answers in their own words and manually enter them through the keyboard. This is especially burdensome when completing the web survey on a mobile device with a virtual on-screen keyboard shrinking the viewing space (Höhne et al., 2020). Open textual answers increase respondent burden and might reduce respondents' willingness to participate. On the other hand, respondents might be less willing to participate in video-based web surveys if the answer component invades respondents' privacy (Wenz et al., 2019). For example, some respondents feel uncomfortable to record answers using the built-in microphone of their smartphone (e.g., out of concerns to be overheard by third parties), leading to lower willingness to participate in web surveys with voice answers (Höhne, 2023; Lenzner & Höhne, 2022; Revilla et al., 2018). Web surveys with video-based answers are even more intrusive as they require respondents to not only share their voice but their overall appearance, gestures, facial expressions, and environment (Höhne et al., 2023).

Even though video-based web surveys have the potential to reduce respondent burden and improve data quality, they might lead to low participation rates because respondents feel uncomfortable with respect to video-based answers. Thus, the choice of the answer component is a key design decision in video-based web surveys that should follow empirical evidence. Before employing video-based web surveys, it is essential to gather more knowledge on respondents' willingness to participate in such web surveys and possible variations in the characteristics of video-based web surveys. We fill this research gap by analyzing data from two studies that we conducted in German non-probability online panels and in which we asked respondents for their willingness to participate in video-based web surveys. Specifically, we address the following three research questions (RQs):

RQ1: What is the share of respondents being (non)willing to participate in video-based web surveys with different question and answer components?

RQ2: What are the reasons for respondents' (non)willingness to participate in video-based web surveys?

RQ3: What variables drive respondents' (non)willingness to participate in video-based web surveys?

Method

Study 1

Data Collection

Data for Study 1 was collected in the non-probability SoSci Panel (www.soscipanel.de), which is a project of the Institute for Communication Science and Media Research at the Ludwig-Maximilian-University Munich (Germany) and the German Society for Journalism and Communication Science (DGPuK). The SoSci Panel does not pursue commercial goals and data can only be collected for academic studies. Researchers are eligible to submit study proposals that undergo a review process evaluating the methodological soundness of the studies. Upon acceptance, the panel staff sends out email invitations to the respondents of the SoSci Panel pool (recruited via an opt-in subscription process) to take part in the web survey. Researchers do not have to pay any fees as web survey data collection is free of charge.

The web survey was fielded from 16th May 2022 to 5th June 2022. A reminder was sent on 25th May 2022. The invitation email included information on the web survey's topic (new communication forms in web surveys), its estimated duration (approx. 20 minutes), and a link to the web survey. Respondents could participate with the device of their choice. The first survey page provided additional details on the web survey (e.g., the research group responsible for the web survey). We also included a statement of confidentiality, stating that the study adheres to EU and national data protection laws and regulations. Respondents took part voluntarily without the provision of incentives.

Sample

The invitation email was sent to 5,676 respondents (out of these emails, 68 could not be successfully delivered). Out of all successfully invited respondents, 1,146 respondents (20%) started the web survey, and 874 respondents (15%) finished it. These 874 respondents had a mean age of 49, and 63% of them were female. In terms of education, 5% had completed lower secondary school or less (low education level), 15% intermediate secondary school (medium education level), and 79% college preparatory secondary school or university-level education (high

education level). Overall, 63% of respondents participated with a computer, 3% with a tablet, and 35% with a smartphone.

Experimental Design

Respondents were randomly assigned to one out of three experimental groups. The first group (n = 297) received two closed questions on their willingness to participate in web surveys with video-based questions and answers. The second group (n = 294) received the same questions, but the two willingness questions included an additional motivational statement placed between the question text and answer options, stressing the provision of an additional incentive. The third group (n = 283) again received the same questions, but the two willingness questions included an additional motivational statement, stressing the improvement of respondent experience in surveys. Irrespective of the experimental groups, both willingness questions were followed by an open probing question asking respondents to elaborate on their previous answer.

To evaluate the effectiveness of random assignment, we compared the sample composition between the three experimental groups. We found no statistically significant differences with respect to age, gender, education, and completion device.

Willingness Questions

Respondents received the following two questions (in one out of three versions):

1. *Video-based questions:* In general, are you willing to participate in web surveys in which **interviewers read questions to you via pre-recorded videos**?

   The videos would be played within the web survey, you would not have to download any software. You could start and stop the videos at your convenience.

   Version 1: No additional text (first experimental group).

   Version 2: You would receive an additional incentive for this (second experimental group).

   Version 3: Your willingness would help us to improve the experience of respondents in surveys (third experimental group).

2. *Video-based answers:* In general, are you willing to participate in web surveys in which **you self-record your answers via videos**?

   The video recordings would be gathered within the web survey, you would not have to download any software. You could delete the videos and record them again.

Version 1: No additional text (first experimental group).

Version 2: You would receive an additional incentive for this (second experimental group).

Version 3: Your willingness would help us to improve the experience of respondents in surveys (third experimental group).

The willingness questions were presented on two separate survey pages (single-question presentation) with the following vertically aligned answer options: 1 (*definitely yes*), 2 (*probably yes*), 3 (*probably no*), 4 (*definitely no*), 5 (*don't know how this works*), and 6 (*don't have a device with camera and microphone*; only for the second willingness question). The last two options were visually separated by a space from the remaining options. Both willingness questions were followed by an open probing question asking respondents to elaborate on their previous answer. Appendix A includes screenshots of the willingness and probing questions.

Study 2

Data Collection

Data for Study 2 was collected in the non-probability Bilendi panel (www.bilendi.de) in Germany from 5th December 2023 to 18th December 2023. Bilendi drew a sample from their online access panel based on quotas for age, gender, education, and federal state. In contrast to the SoSci Panel (Study 1), Bilendi is a commercial panel providing respondents incentives for web survey participation. The invitation email included information on the provided incentive and a link to the web survey. Respondents could participate with the device of their choice. On the first survey page, respondents were informed about the topic and procedure of the web survey. In addition, it included a statement of confidentiality, stating that the study adheres to existing data protection laws and regulations. This study was part of a larger study investigating perspectives on current challenges for society and politics. The web survey included questions on political attitudes and attitudes towards technology. In addition, it contained two unrelated experiments. The experiment analyzed in this study was embedded at the end of the web survey.

Sample

The invitation email was sent to 28,455 respondents, out of which 2,356 (8%) started the web survey and 1,993 respondents (7%) finished it. These 1,993 respondents had a mean age of 45, and 50% of them were female. In terms of education, 26% had completed lower secondary school or less (low education

level), 28% intermediate secondary school (medium education level), and 46% college preparatory secondary school or university-level education (high education level). Overall, 44% of respondents participated with a computer, 4% with a tablet, and 52% with a smartphone.

Experimental Design

We randomly assigned respondents to one out of four closed question versions (or experimental groups) asking respondents about their willingness to participate in future video-based web surveys. These questions differed with respect to the answer component: The first group (n = 485) was asked about the willingness to participate in video-based web surveys with predefined answer options (i.e., selecting answers from a list of predefined options). The second group (n = 515) was asked about the willingness to participate in video-based web surveys with open textual answers (i.e., entering answers in an open text field). The third group (n = 506) was asked about the willingness to participate in video-based web surveys with voice answers (i.e., self-recording voice answers). The fourth group (n = 487) was asked about the willingness to participate in video-based web surveys with video-based answers (i.e., self-recording video answers).

To evaluate the effectiveness of random assignment, we compared the sample composition between the four experimental groups. We found no statistically significant differences with respect to age, gender, education, and completion device.

Willingness Questions

Respondents received one out of the following four question versions:

1. *Predefined answer options:* In general, would you be willing to participate in future web surveys in which interviewers read questions to you via video, and **you select your answers from a list of predefined options**?

   The videos would be played within the web survey. You would not need to download an additional program. The interviewer videos would be recorded so that you can start and pause them yourself.

2. *Open textual answers:* In general, would you be willing to participate in future web surveys in which interviewers read questions to you via video, and **you enter your answers in an open text field**?

   The videos would be played within the web survey. You would not need to download an additional program. The interviewer videos would be recorded so that you can start and pause them yourself.

3. *Voice answers:* In general, would you be willing to participate in future web surveys in which interviewers read questions to you via video, and **you provide your answers via voice recording**?

   The videos would be played within the web survey, the same applies to the voice recordings. You would not need to download an additional program. The interviewer videos would be recorded so that you can start and pause them yourself. Of course, you could delete your voice recordings and record them again.

4. *Video-based answers:* In general, would you be willing to participate in future web surveys in which interviewers read questions to you via video, and **you provide your answers via video recording**?

   The videos would be played within the web survey, the same applies to the video recordings. You would not need to download an additional program. The interviewer videos would be recorded so that you can start and pause them yourself. Of course, you could delete your video recordings and record them again.

The willingness question was presented with the following vertically aligned answer options: 1 (*definitely yes*), 2 (*probably yes*), 3 (*probably no*), 4 (*definitely no*), 5 (*don't know how this works*), and 6 (*don't have a device with a microphone*; only for group 3) or 6 (*don't have a device with camera and microphone*; only for group 4). The last two options were visually separated by a space from the remaining options. Appendix B includes screenshots of the willingness question.

Analytical Strategy

To examine the share of respondents being (non)willing to participate in video-based web surveys (first research question), we remain on a descriptive level and report answer distributions of the willingness questions. In the first step, we draw on data from Study 1 and look at the answer distributions of the two questions on respondents' willingness to participate in web surveys with video-based questions and answers, respectively. In the next step, we draw on data from Study 2 and examine the answer distribution of the question on respondents' willingness to participate in video-based web surveys across the four experimental groups (or answer components).

To investigate the reasons for respondents' (non)willingness (second research question), we draw on the open probing questions asked in Study 1. To do so, respondents' open textual answers were manually coded by a student assistant. The student assistant developed the coding schemes based on the data rather

than using preconceived codes. The final coding schemes consisted of 9 (willingness for video-based questions) and 10 (nonwillingness for video-based questions) as well as 9 (willingness for video-based answers) and 10 (nonwillingness for video-based answers) categories, respectively. In addition, the coding schemes contained two non-substantial categories (misunderstanding how video-based questions or answers work as well as noninformative reasons and non-substantial answers). Using these coding schemes, a second student assistant independently coded a randomly selected subset of 10% of the answers to the two open probing questions (video-based questions: $n = 77$; video-based answers: $n = 72$) so that we could estimate inter-coder reliability. Inter-coder reliability was deemed "almost perfect" (Landis & Koch, 1977) with Cohen's kappa values of .85 and .88 and agreement rates of 85.7% and 88.9% for the two open probing questions, respectively. Cases in which the two coders disagreed were reviewed by the second author who made a final judgment. The reasons for respondents' (non)willingness are reported in percentages. Importantly, when looking at the reasons for respondents' willingness to participate in web surveys with video-based questions and answers, we only consider respondents who selected "definitely yes" or "probably yes" in the preceding closed question. Conversely, when looking at the reasons for respondents' nonwillingness, we only consider respondents who selected "definitely no" or "probably no" in the preceding closed question.

To identify variables driving respondents' willingness to participate in video-based web surveys (third research question), we run multiple OLS regressions. Based on Study 1, we estimate regression models with respondents' willingness to participate in web surveys with video-based questions and answers as dependent variables, respectively. The two non-substantial answer options are excluded from the regression analyses. We include the experimental groups, which differ in terms of the provision of a motivational statement, as independent dummy variables in the models (provision of an additional incentive: 1 = *yes*; improvement of respondent experience in surveys: 1 = *yes*; control group as reference). Using data from Study 2, we again run regression models with respondents' willingness to participate in video-based web surveys as dependent variable excluding the two non-substantial answer options. As before, we include the experimental groups, which differ in terms of the answer component, as independent dummy variables in the model (open textual answers: 1 = *yes*; voice answers: 1 = *yes*; video-based answers: 1 = *yes*; predefined answer options as reference). In addition, we use the following independent variables that were suggested by prior studies to be associated with respondents' willingness (Höhne, 2023; Höhne et al., 2023; Lenzner & Höhne, 2022; Revilla et al., 2018): belief that technology facilitates communication (7 ascending options), personality traits in terms of openness, conscientiousness, extraversion, agreeableness, and neuroticism (21 ascending options in Study 1 and 14 ascending options in Study 2,

respectively[1]), and survey evaluations in terms of interest (7 ascending options), difficulty (7 ascending options), topic sensitivity (7 ascending options), and general evaluation (7 ascending options; Study 2 only). Furthermore, we control for age (continuous), female (1 = *yes*), high education (1 = *yes*) and medium education (1 = *yes*) with low as reference, and smartphone use in the survey (1 = *yes*). English translations of the question wordings of the independent variables are available in Appendix C. Data and analysis code for replication purposes are available via Harvard Dataverse (see https://doi.org/10.7910/DVN/CYNCJJ).

Results

Research Question 1

In a first step, we draw on data from Study 1 to describe the share of respondents being (non)willing to participate in web surveys with video-based questions and answers, respectively. Table 1 presents the results. Across the three experimental groups, about 60% of respondents are definitely or probably willing to participate in web surveys with video-based questions. Respondents' willingness to participate in web surveys with video-based answers is considerably lower. Only about 25% of respondents are definitely or probably willing to participate in such web surveys. According to two chi-squared tests, there are no significant differences between the three experimental groups (i.e., control, provision of an additional incentive, and improvement of respondent experience) regarding willingness to participate in web surveys with video-based questions ($\chi^2(6) = 12.22$, $p = .057$) and video-based answers ($\chi^2(6) = 10.13$, $p = .119$). In addition, about 3% of respondents state that they do not know how the video-based questions or answers work and about 6% of respondents state that they do not have a device with camera and microphone.

Next, we turn to Study 2 examining respondents' willingness to participate in video-based web surveys with different answer components. Table 2 shows the results separately for each of the four experimental groups. In the first group (predefined answer options), 72% of respondents are definitely or probably willing to participate in video-based web surveys. In the second group (open textual answers), willingness is slightly lower (67%). In contrast, only 47% of respondents in the third group (voice answers) and 38% in the fourth group (video-based answers) are definitely or probably willing to participate in video-based

[1] In Study 1, we employed the BFI-S inventory by Schupp and Gerlitz (2008), measuring each of the Big Five personality traits with three items and a 7-point response scale. In Study 2, due to time restrictions, we employed the shorter BFI-10 inventory by Rammstedt et al. (2014), measuring each of the Big Five personality traits with two items and a 7-point response scale. For each trait, we summed up answers to the respective items.

web surveys. According to a chi-squared test, the differences between the four experimental groups are statistically significant ($\chi^2(9) = 137.11$, $p < .001$). Across all experimental groups, between 3% and 6% of respondents state that they do not know how video-based web surveys work and about 10% (third and fourth groups) state that they do not have a device with camera and microphone.

Research Question 2

In a second step, we look at the open probing questions in Study 1 and examine respondents' reasons for their (non)willingness to participate in web surveys with video-based questions and answers, respectively. Tables 3 and 4 show the results. With respect to their willingness to participate in web surveys with video-based questions, respondents most frequently indicate willingness without providing a substantial reason (22%; e.g., "I like the idea"), followed by convenience and time flexibility (21%), and mentioning a general openness to new technologies and procedures (12%). Furthermore, 10% of respondents say that this does not represent an additional burden, 9% explain that their willingness depends on the particular survey, situation, and timing, and another 8% indicate that video-based questions are more personal, authentic, and interactive. Less than 5% of respondents mention support for and interest in science as well as already using the technology in daily life. A few respondents (4%) provide other reasons (e.g., "additional incentive"), seem to misunderstand how video-based questions works (6%; e.g., "I can ask questions"), or provide noninformative reasons and non-substantial answers (9%; e.g., "./.").

With respect to their willingness to participate in web surveys with video-based answers, respondents most often indicate their willingness without providing a substantial reason (21%; e.g., "Why not?"). This is followed by convenience and time flexibility (16%), dependence on the particular survey, situation, and timing (13%), and support for and interest in science (13%). In addition, 11% of respondents indicate a general openness to new technologies and procedures and 6% state that they already use the technology in daily life. A few respondents (less than 5%) refer to no additional burden or describe video-based answers as more personal, authentic, and interactive. Furthermore, 6% of respondents mention other reasons (e.g., "Trust in data protection laws"), 3% seem to misunderstand how video-based answers work (e.g., "I can ask the interviewer comprehension questions"), and 7% provide noninformative reasons and non-substantial answers (e.g., "Depends on the weather").

Among respondents who are not willing to participate in web surveys with video-based questions, the most frequently mentioned reason is requiring too much effort (38%), followed by a preference for reading (17%), and concerns about third parties being around (12%). Furthermore, 9% of respondents refer to no added value and 7% mention privacy and data security concerns. Less than

5% of respondents mention technical obstacles, uncomfortableness, and indicate nonwillingness without providing a substantial reason (e.g., "Don't want to"). Finally, 8% of respondents indicate other reasons (e.g., "Personal reasons"), 19% seem to misunderstand how video-based questions work (e.g., "I don't want to download unknown software"), and 4% provide noninformative reasons and non-substantial answers (e.g., "No").

Table 1 Respondents' willingness to participate in web surveys with video-based questions and answers (Study 1)

Answer options	Control		Provision of an additional incentive		Improvement of respondent experience	
	Video-based questions (%)	Video-based answers (%)	Video-based questions (%)	Video-based answers (%)	Video-based questions (%)	Video-based answers (%)
Definitely no	10	40	11	31	14	42
Probably no	24	29	23	34	29	30
Probably yes	43	15	37	19	34	16
Definitely yes	20	4	26	7	20	5
Don't know how this works	3	3	3	2	2	3
Don't have a device with camera and microphone	–	8	–	7	–	4
n	297	297	293	293	283	278

Notes: The last two options were visually separated by a space from the remaining options (see Appendix A for screenshots of the two questions). Due to rounding percentages may not add up to 100%. The control group was also analyzed in Höhne et al. (2023).

With respect to respondents who are not willing to participate in web surveys with video-based answers, more than one third of respondents (41%) state privacy and data security concerns. This is followed by requiring too much effort (21%), uncomfortableness (19%), and nonwillingness without providing a substantial reason (8%; e.g., "Don't want to"). Furthermore, 8% of respondents mention a lack of ability to control (altering or deleting recordings), 6% refer to no added value, and another 6% indicate concerns about third parties being around. Up to 4% of respondents mention a preference for writing or technical obstacles. Finally, 7% of respondents indicate other reasons (e.g., "Might distort survey results"), 1% seem to misunderstand how video-based answers work (e.g., "Don't like to participate in a video conference"), and 3% provide noninformative reasons and non-substantial answers (e.g., "Why?").

Table 2 Respondents' willingness to participate in video-based web surveys with different answer components (Study 2)

Answer options	Predefined answer options (%)	Open textual answers (%)	Voice answers (%)	Video-based answers (%)
Definitely no	9	9	12	21
Probably no	15	17	29	26
Probably yes	35	33	27	21
Definitely yes	37	34	20	17
Don't know how this works	4	6	4	3
Don't have a device with camera and microphone	–	–	9	11
n	485	515	505	487

Notes: The last two options were visually separated by a space from the remaining options (see Appendix B for screenshots of the four question versions). Due to rounding percentages may not add up to 100%.

Table 3 Reasons for willingness to participate in web surveys with video-based questions and answers (Study 1)

Reasons for willingness	Video-based questions (%)	Video-based answers (%)
Willingness (without providing a substantial reason)	22	21
Convenience and time flexibility	21	16
Willingness depends on survey, situation, and timing	9	13
General openness to new technologies and procedures	12	11
Support for and interest in science	4	13
No additional burden	10	3
More personal, authentic, and interactive	8	3
Already using technology in daily life	4	6
Other	4	6
Misunderstanding how video-based questions or answers work	6	3
Noninformative reasons and non-substantial answers	9	7

Notes: $N = 478$ (video-based questions) and $N = 173$ (video-based answers). Respondents were able to mention multiple reasons and thus percentages may not add up to 100%.

Table 4 Reasons for nonwillingness to participate in web surveys with video-based questions and answers (Study 1)

Reasons for nonwillingness	Video-based questions (%)	Video-based answers (%)
Requiring too much effort	38	21
Privacy and data security concerns	7	41
Preference for reading or writing	17	3
Uncomfortableness	1	19
Third parties around	12	6
No added value	9	6
Nonwillingness (without providing a substantial reason)	4	8
Lack of ability to control (altering or deleting recordings)	–	8
Technical obstacles	3	4
Other	8	7
Misunderstanding how video-based questions or answers work	19	1
Noninformative reasons and non-substantial answers	4	3

Notes: $N = 295$ (video-based questions) and $N = 550$ (video-based answers). Respondents were able to mention multiple reasons and thus percentages may not add up to 100%.

Research Question 3

Finally, we investigate which variables drive respondents' non(willingness) to participate in video-based web surveys. To do so, we first draw on data from Study 1 and run OLS regressions on respondents' willingness to participate in web surveys with video-based questions and answers, respectively. For each of the dependent variables we estimate two models. In the first model, we only include the experimental groups as independent dummy variables. In the second model, we add the additional independent variables (see "Analytical strategy"). Table 5 presents the results. Regarding respondents' willingness to participate in web surveys with video-based questions as dependent variable, only the second model is statistically significant and has explanatory power: Model M1 ($F(2,782) = 2.52$, $p = .081$, adjusted $R^2 = .00$) and M2 ($F(16,768) = 5.82$, $p < .001$, adjusted $R^2 = .09$). The experimental groups are not associated with respondents' willingness. Instead, the belief that technology facilitates communication, extraversion, and evaluating the current survey as more interesting and more difficult are positively associated with respondents' willingness to participate

in web surveys with video-based questions. In contrast, higher age and being female are negatively associated with respondents' willingness.

Looking at the regression models with respondents' willingness to participate in web surveys with video-based answers as dependent variable, both models are statistically significant. Adding the additional independent variables in the second model increases explanatory power: M1 ($F(2,730) = 4.14$, $p = .016$, adjusted $R^2 = .01$) and M2 ($F(16,716) = 7.04$, $p < .001$, adjusted $R^2 = .12$). In both models, the dummy variable for the second experimental group (statement stressing the provision of an additional incentive) is positively associated with respondents' willingness to participate in web surveys with video-based answers. Similar to video-based questions, the belief that technology facilitates communication, extraversion, and evaluating the current survey as more interesting are positively associated with respondents' willingness. In contrast, using a smartphone to answer the survey is negatively associated with respondents' willingness.

Next, analyzing data from Study 2, we estimate two regression models with respondents' willingness to participate in video-based web surveys as dependent variable and include the experimental groups as independent dummy variables. Table 6 shows the results. Both models are statistically significant. Adding the additional independent variables in the second model increases explanatory power: M1 ($F(3,1759) = 38.43$, $p < .001$, adjusted $R^2 = .06$) and M2 ($F(18,1744) = 25.29$, $p < .001$, adjusted-$R^2 = .17$). In both models, the dummy variables for the third (voice answers) and fourth groups (video-based answers) are negatively associated with respondents' willingness to participate in video-based web surveys. Similarly, higher age and being female are negatively associated with respondents' willingness. In contrast, high education, extraversion, evaluating the survey as more interesting, and evaluating the survey more positively are positively associated with respondents' willingness to participate in video-based web surveys.

Discussion and Conclusion

The aim of this article was to investigate respondents' willingness to participate in video-based web surveys: web surveys in which at least one of the interview components (i.e., questions or answers) is based on video communication technology. For this purpose, we conducted two experimental studies. Similar to previous research (Höhne et al., 2023; Schober et al., 2023), our results show that respondents are more willing to participate in web surveys with video-based questions than to participate in web surveys with voice (Study 2) or video-based answers (Studies 1 and 2). Respondents' reasons for (non)willingness differ between video-based questions and answers (Study 1). Overall, willingness for video-based web surveys is driven by respondent as well as survey character-

Table 5 OLS regressions with willingness to participate in web surveys with video-based questions and answers as dependent variables (Study 1)

Independent variables	Video-based questions				Video-based answers			
	M1		M2		M1		M2	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Motivational statement (reference: control)								
Provision of an additional incentive	.06 ($p = .458$)	.08	.04 ($p = .625$)	.08	.22 ($p = .007$)	.08	.20 ($p = .008$)	.08
Improvement of respondent experience	−.13 ($p = .118$)	.08	−.15 ($p = .062$)	.08	.04 ($p = .664$)	.08	.06 ($p = .454$)	.08
Belief technology facilitates communication			.07 ($p = .004$)	.02			.09 ($p < .001$)	.02
Personality traits								
Openness			.01 ($p = .342$)	.01			−.00 ($p = .876$)	.01
Conscientiousness			−.01 ($p = .507$)	.01			.01 ($p = .636$)	.01
Extraversion			.02 ($p = .008$)	.01			.05 ($p < .001$)	.01
Agreeableness			−.02 ($p = .142$)	.01			−.01 ($p = .411$)	.01
Neuroticism			−.00 ($p = .664$)	.01			−.00 ($p = .615$)	.01
Survey evaluation								
Interest			.14 ($p < .001$)	.03			.09 ($p < .001$)	.02
Difficulty			.07 ($p = .024$)	.03			.02 ($p = .448$)	.03
Topic sensitivity			−.01 ($p = .582$)	.02			−.03 ($p = .192$)	.02

Table 5 (continued)

Independent variables	Video-based questions				Video-based answers			
	M1		M2		M1		M2	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Age			−.01 ($p < .001$)	.00			.00 ($p = .606$)	.00
Female			−.17 ($p = .018$)	.07			−.12 ($p = .096$)	.07
Education (reference: low)								
Medium			−.00 ($p = 1.00$)	.18			.23 ($p = .254$)	.20
High			.05 ($p = .747$)	.17			.06 ($p = .723$)	.18
Smartphone use			−.14 ($p = .060$)	.07			−.16 ($p = .021$)	.07
Constant	2.76 ($p < .001$)	.05	2.10 ($p < .001$)	.43	1.81 ($p < .001$)	.06	.45 ($p = .272$)	.41
N	785		785		733		733	

Notes: M = model, *SE* = robust standard error. Coding of the dependent variables video-based questions and answers: 1 (*definitely no*), 2 (*probably no*), 3 (*probably yes*), and 4 (*definitely yes*). Exclusion of non-substantial answer options and respondents with missing values for any of the independent variables. We also excluded respondents selecting the answer option "divers" when asked for their gender because the share was very low ($n = 15$).

Table 6 OLS regressions with willingness to participate in video-based web surveys as dependent variable (Study 2)

Independent variables	M1		M2	
	b	*SE*	*b*	*SE*
Answer component (reference: predefined answer options)				
Open textual answers	−.06 (p = .355)	.06	−.07 (p = .278)	.06
Voice answers	−.43 (p < .001)	.07	−.46 (p < .001)	.06
Video-based answers	−.63 (p < .001)	.07	−.65 (p < .001)	.06
Belief technology facilitates communication			.03 (p = .107)	.02
Personality traits				
Openness			.01 (p = .094)	.01
Conscientiousness			−.01 (p = .423)	.01
Extraversion			.03 (p = .001)	.01
Agreeableness			.02 (p = .130)	.01
Neuroticism			−.01 (p = .682)	.01
Survey evaluation				
Interest			.16 (p < .001)	.02
Difficulty			−.02 (p = .360)	.02
Topic sensitivity			.00 (p = .911)	.02
General evaluation			.05 (p = .018)	.02
Age			−.01 (p < .001)	.00
Female			−.15 (p = .001)	.05
Education (reference: low)				
Medium			.01 (p = .870)	.06
High			.20 (p = .001)	.06
Smartphone use			.06 (p = .194)	.05
Constant	3.04 (p < .001)	.05	1.66 (p < .001)	.25
N	1,763		1,763	

Notes: M = model, *SE* = robust standard error. Coding of dependent variable: 1 (*definitely no*), 2 (*probably no*), 3 (*probably yes*), and 4 (*definitely yes*). Exclusion of non-substantial answer options and respondents with missing values for any of the independent variables.

istics. In the following, we discuss our empirical findings in light of our three research questions. It is important to note that the results of the two studies can only be compared cautiously because both samples are non-probabilistic and differ in their composition (e.g., in terms of education).

With respect to our first research question on the share of respondents being (non)willing to participate in video-based web surveys we found that many respondents are willing to participate in web surveys with video-based ques-

tions. However, when it comes to video-based answers, the picture changes. As shown in Study 1, only about 25% of respondents are definitely or probably willing to participate in web surveys with video-based answers. Interestingly, willingness for video-based answers is substantially higher in Study 2 (almost 40%). While respondents' willingness for voice answers is only slightly higher (about 50%), most respondents are willing to select predefined answer options and enter open textual answers when surveyed through pre-recorded interviewers (about 70%, respectively). On average, less than 10% of respondents indicate that they do not know how the video-based questions and answers work or state that they do not have a device with camera and microphone (Studies 1 and 2). This suggests that only a minority of respondents cannot participate in video-based web surveys because they lack knowledge or equipment. However, it is possible that we underestimate the share of these respondents, as some respondents may have selected "probably no" or "definitely no" due to a lack of knowledge and equipment.

Our second research question investigated the reasons for respondents' (non) willingness to participate in video-based web surveys (Study 1). Overall, we found relatively similar patterns for both video-based questions and answers. The most frequently mentioned reasons for willingness to use this technology were as follows: willing without providing a substantial reason (about 20%) and convenience and time flexibility (about 20%). Particularly, the latter category indicates that video-based communication potentially facilitates web survey completion for some respondents. A substantial minority of respondents also mentioned that their willingness depends on the survey, situation, and timing (about 10%) and that they are generally open to new technologies and procedures (about 10%). The former category suggests that these respondents may change their opinion if the survey setting does not fit their expectations (e.g., presence of third parties). Support for and interest in science was frequently mentioned when it comes to video-based answers (more than 10%), but not when it comes to video-based questions (less than 5%) showing that respondents may have different motivations for both components.

For nonwillingness, we found substantial differences between video-based questions and answers, which indicates that respondents are more divided. While about 40% stated that video-based questions require too much effort, only about 20% stated this reason when it comes to video-based answers. Privacy concerns were much more common for video-based answers (about 40%) than for video-based questions (less than 10%). This similarly applies to the category uncomfortableness when it comes to video-based answers (about 20%), which was indicated by only 1% of respondents for video-based questions. Thus, video-based answers put some respondents in an unpleasant position. Finally, concerns regarding third parties were mentioned both regarding video-based questions (about 10%) and video-based answers (about 5%). This indicates that some respondents may be concerned about disturbing other people.

Video-based answers do not only provide a direct view into respondents' environment (e.g., their home or workplace), but also into their appearance, gestures, and facial expressions. Thus, some respondents may find them intrusive and consider them as a threat to their overall privacy. For example, research on answering web survey questions through pictures has shown that respondents are more willing to provide a picture of what they see (or their location) than a selfie that would allow researchers to infer their in-the-moment feelings (Bosch et al., 2022). In order to pursue such requests in web surveys it appears inevitable to take respondents' privacy concerns seriously and to include measures that potentially alleviate these concerns. Following Keusch and Conrad (2022), this may include the explanation of the importance of providing video-based answers, a reduced utilization of video-based answers (only for few questions instead of the entire web survey), or the provision of additional incentives. As shown in Table 5, promising an additional incentive was positively associated with respondents' willingness to participate in web surveys with video-based answers.

Regarding our third research question on variables driving respondents' (non)willingness to participate in video-based web surveys we found that specific respondent groups seem to be more open than others. For example, respondents believing that technology facilitates communication (Study 1), being extraverted, and having higher interest in the survey (Studies 1 and 2) seem to be more attached to video-based web surveys. We also found that younger, male (Studies 1 and 2), and higher educated (Study 2) respondents show higher willingness. Importantly, the comparison of the findings on education across studies is limited because of the large imbalance in Study 1 (it only includes 5% low educated respondents). Nonetheless, these findings indicate that traditional respondent characteristics, such as age and gender, are not sufficient to infer respondents' willingness for new communication forms in web surveys. For the future of web surveys, it is key to further investigate respondents' motivations for new communication forms, because it may help to recruit respondents that are reluctant to participate in traditional text-only web surveys (Revilla & Höhne, 2020). Considering our results on the reasons for nonwillingness, it would be worthwhile to include direct measures of respondents' privacy concerns in future studies. In addition, future studies should examine whether the use of video communication in other contexts, such as work or personal life, influences willingness to participate in video-based web surveys.

Importantly, these considerations are also related to a more theory-driven investigation of respondents' willingness to participate in video-based web surveys. More specifically, we advocate for the creation of survey participation frameworks that can be empirically tested or from which empirically testable research hypotheses can be inferred. A starting point for the creation of such theoretical frameworks can be the "uses and gratification" theory (Katz et al.

1973). Potentially, this helps to develop more respondent-centered web survey data collection strategies (Wilson & Dickinsson, 2022).

This article has some methodological limitations that provide avenues for future research. First and foremost, we only asked respondents for their hypothetical willingness and did not examine their actual participation in video-based web surveys. Previous research has indicated that hypothetical willingness and successful participation in data collection tasks can differ and may be driven by different variables (Keusch et al., 2024). Future research should investigate whether and to what extent the response rates of video-based web surveys are indeed as high as suggested by respondents' hypothetical willingness. Second, we conducted our studies among respondents of non-probability online panels and thus we cannot infer to the general population. For example, as shown by Höhne (2023) as well as Lenzner and Höhne (2022), willingness among respondents from non-probability and probability-based panels differ. If respondents of probability-based panels are indeed more reluctant to use video-based technology than respondents of non-probability panels, researchers would have to weigh the (possible) benefits of collecting richer and more nuanced data (by employing voice and video-based answers in non-probability panels) against the possibility of inferring from the sample to the general population. Therefore, it is important that future research examines differences in the willingness of respondents from non-probability and probability-based panels as well as cross-sectional web surveys in general. Third, we argued that video-based web surveys may be particularly well suited for respondents with lower literacy levels and with lower competence in the language of the web survey. However, we were not able to include measures of these competencies in the web survey and thus we could not properly distinguish between low educated respondents and those with low literacy when it comes to the survey language (German). We encourage future research to examine this issue more thoroughly by employing methods for determining literacy levels of respondents. For example, this includes lexical decision tasks (Juhasz et al., 2019; Schwarz et al., 2020), sentence reading tests (Bergmann & Wimmer, 2008; Kroh et al., 2016), and literacy self-reports (Snowling et al., 2012). This way, it is possible to better isolate the impact of video-based web surveys on low-literacy groups.

Finally, given the continual growth of web surveys and the significance of video-based communication in our daily lives, it is inevitable that these forms of communication will soon integrate into web surveys. Indeed, several studies are already underway experimenting with video-based web surveys (Conrad et al., 2023; West et al., 2022). This development is further supported by advances in Generative Artificial Intelligence (GenAI), enabling researchers to create virtual interviewers varying in their visual appearance and speech characteristics (Höhne, Neuert, & Claassen, 2024). Since virtual interviewers can be created quickly and at low costs, GenAI may render video-based web surveys more

feasible. In a next step, it would be worthwhile to investigate if respondents' willingness to participate in video-based web surveys is dependent on whether questions are delivered by pre-recorded (human) interviewers or AI-generated virtual interviewers. Importantly, video-based web surveys, both with pre-recorded and virtual interviewers, hold immense potential to emulate crucial aspects of face-to-face interviews while remaining highly efficient in terms of time and cost. Moreover, the self-administration mode offers respondents a level of flexibility that traditional face-to-face (including live video) interviews cannot match. Consequently, there is no waste of interviewer time. Additionally, the elimination of interviewer travel reduces fieldwork efforts and renders data collection more environmentally sustainable. Hence, it is prudent to begin contemplating the integration of these communication forms into web surveys and determining the most effective methods for their incorporation.

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Appendix A

Screenshots of the Willingness and Probing Questions (Study 1)

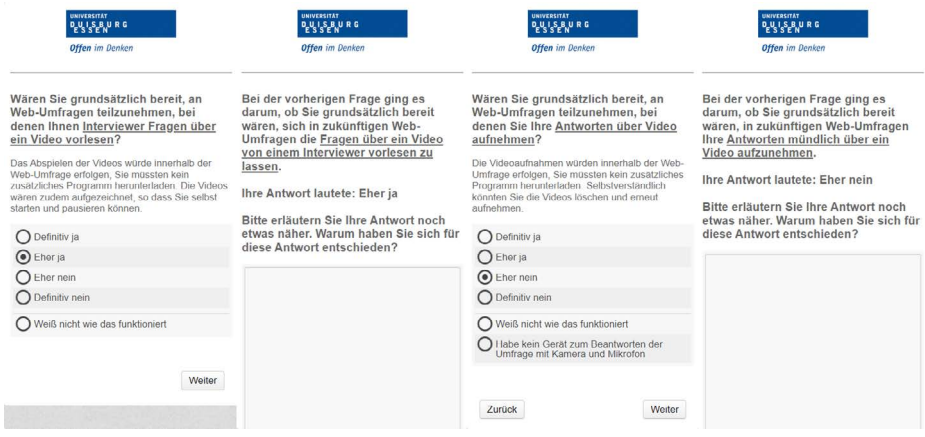

Figure A1 Exemplary smartphone screenshots of the two willingness questions and the two open probing questions in the first experimental group (no motivational statement) in Study 1. The first set (on the left) shows the questions on video-based questions and the second set shows the questions on video-based answers (on the right).

Appendix B

Screenshots of the Willingness Question (Study 2)

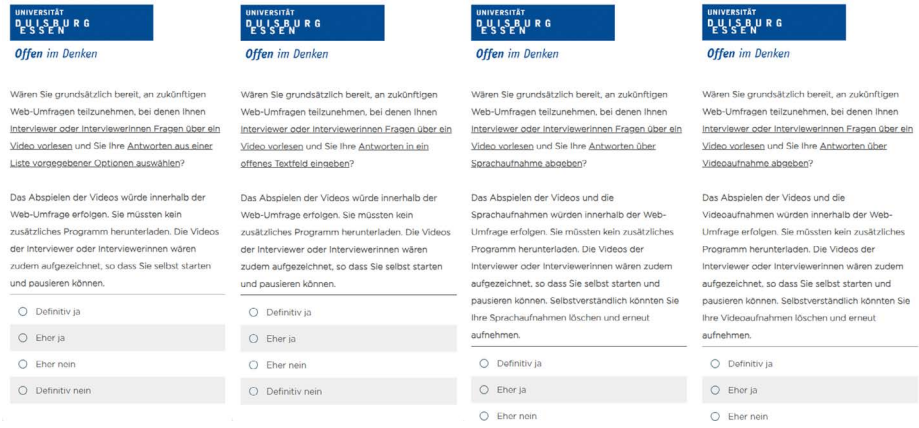

Figure B1 Exemplary smartphone screenshots of the four versions of the willingness question in Study 2. Question versions from left to right: predefined answer options (Group 1), open textual answers (Group 2), voice answers (Group 3), and video-based answers (Group 4).

Appendix C

English Translations of the Question Wordings

Belief That Technology Facilitates Communication (Studies 1 and 2)

To what extent does the following statement apply or not apply to you? New technologies make it easier for me to communicate with other people.
Answer options: 1 (*does not apply at all*) to 7 (*applies completely*)

Big Five Personality Traits (Study 1)

To what extent do the following statements apply or not apply to you?
I am someone who works thoroughly.
I am someone who is communicative and talkative.
I am someone who is sometimes a bit rude to others.
I am someone who is original, brings in new ideas.
I am someone who often worries.
I am someone who is reserved.
I am someone who is forgiving.
I am someone who is rather lazy.
I am someone who can come out of his shell, is sociable.
I am someone who appreciates artistic experiences.
I am someone who gets nervous easily.
I am someone who completes tasks effectively and efficiently.
I am someone who treats others with consideration and kindness.
I am someone who has vivid imagination and ideas.
I am someone who is relaxed and copes well with stress.
Answer options: 1 (*does not apply at all*) to 7 (*totally applies*)

Big Five Personality Traits (Study 2)

To what extent do the following statements apply to you?
I am rather restrained, reserved.
I trust others easily, believe in the good in people.
I am comfortable, tend to be lazy.
I am relaxed, do not let stress upset me.
I have little artistic interest.
I come out of my shell and am sociable.
I tend to criticize others.
I complete tasks thoroughly.
I get nervous and insecure easily.
I have an active imagination, I am creative.
Answer options: 1 (*does not apply at all*) to 7 (*totally applies*)

Survey Interest (Studies 1 and 2)

How interesting did you find it to answer the questions asked?
Answer options: 1 (*very interesting*) to 7 (*not interesting at all*)

Survey Difficulty (Studies 1 and 2)

How easy or difficult did you find it to answer the questions asked?
Answer options: 1 (*very easy*) to 7 (*very difficult*)

Topic Sensitivity (Studies 1 and 2)

How personal did you find answering the questions asked?
Answer options: 1 (*very personal*) to 7 (*not personal at all*)

General Evaluation (Study 2)

How did you like the survey overall?
Answer options: 1 (*not at all*) to 7 (*very much*)

Online First publication: 2025-10-02