

Conducting “In-Person” Research During a Pandemic

Marc J. Dupuis
marcjd@uw.edu
University of Washington
Bothell, Washington

Karen Renaud
k.renaud@abertay.ac.uk
Abertay University
Dundee, UK

ABSTRACT

The COVID-19 pandemic has caused major disruptions across the world; universities have not been exempt. This has included disruptions in not only the delivery of traditional in-person classes, but also research. In this paper, we detail the efforts undertaken to modify the research protocols originally developed for a longitudinal experiment design with two in-person components to it. In particular, we address the challenges and benefits of this conversion, including issues related to compensation, scheduling, technical issues, and attempts to replace the in-person component of the original design.

CCS CONCEPTS

• **General and reference** → **Empirical studies; Experimentation; Design.**

KEYWORDS

research design, research protocol, pandemic, experiment, longitudinal study

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1 INTRODUCTION

The COVID-19 pandemic has caused major disruptions across the world; universities have not been exempt. Faculty, staff, and students have scrambled to deliver courses online that have traditionally been taught in-person. Another major activity that has been disrupted in some cases is research. Depending on the nature of the research and the context in which it is performed, some research has faced significant challenges. This may be most evident in research that traditionally involves one or more in-person contacts with research participants.

In this paper, we detail the efforts undertaken to modify the research protocols originally developed for a longitudinal experiment with multiple in-person components to it. In particular, we address the challenges and benefits of this conversion, including issues

related to compensation, scheduling, technology, and attempts to replicate the in-person component of the original design.

2 ORIGINAL PLAN

A large-scale longitudinal experiment was originally planned for the Spring of 2020 to examine the use of fear appeals in cybersecurity as a follow-up study to [6]. Two in-person components were planned as key touch points during the study. The touch points were going to occur on one of two university campuses. The first touch point was going to occur after participants had already completed an initial survey. They would then schedule a time to attend one of the first touch points so that they could watch a video and fill out another survey if they were in one of the treatment conditions, or simply fill out a survey if they were in the control group. They would then be compensated with \$20 in cash for their participation.

After approximately four to six weeks and after having completed two short follow-up surveys, the participants were going to have another in-person touch point for an interview. Upon completion of the interview, they were going to be compensated the final \$20 for their time. The amount of compensation was important given the role it can play in motivating participants to join a study and then remain a participant through the duration of a longitudinal study, especially when some of the components involved surveys considered somewhat long [2–4]. The number of participants planned for the original study was approximately 400. Recruitment was going to be done through flyers around two university campuses since past experience indicated this approach would be successful (e.g., [1]).

3 MODIFICATIONS

A decision was made to try and complete the study using Zoom wherever an in-person component had originally been planned. The use of video-conferencing technologies for the completion of qualitative interviews has been done for a number of years with success [8].

3.1 Scheduling

While it was decided that Zoom would be used, scheduling individual meetings via Zoom would be challenging given the planned sample size. In the past, we have used a scheduling program, Acuity Scheduling, with great success. This program has made it easy for participants to schedule research appointments on their own and at a time that was convenient to them. It also allows them to cancel or modify it, and provides them with multiple reminders (if selected). Fortunately, an integration had been developed between Zoom and Acuity Scheduling. Basically, when an appointment is scheduled by a research participant, it automatically schedules it as a Zoom meeting.

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3.2 Recruitment

Recruitment became a problem. Since individuals were no longer on campus, they would not see the flyers. While approximately 150 participants had already been recruited through the flyers, this was well short of the number needed. A new strategy was employed, which involved joining various community groups on Facebook and posting about the opportunity there. This included groups associated with the university, as well as those associated with various neighborhoods in the larger metro area. We quickly realized the importance of making our affiliation with the university and community in which the solicitation was being posted very clear as it provided credibility to the solicitation effort. Although this was an atypical approach to recruitment [5], it appeared to be the best option.

3.3 Technical Components

Instead of participants watching the video as a standalone activity, they were embedded within the survey itself. Logic was used within the survey platform Qualtrics to prevent individuals from being able to advance until a certain amount of time equal to the length of the video they were supposed to watch had elapsed.

Since it was decided that Zoom would be used in lieu of the in-person components, it was important for rapport to be established quickly through this platform. This would be accomplished most effectively through enabling the video of the researcher. We did this for both the brief study introduction after survey one and immediately before survey two, as well as for the brief five to 10 minute interviews.

The interviews that were conducted as part of this study were recorded so they could be transcribed later. Zoom's recording feature was used, but as a back-up to Zoom a software program called *Callnote* was also used. This software was configured to automatically record any Zoom call that was started.

3.4 Participant Compensation

Another challenge that had to be overcome was compensation. Cash compensation would continue to be provided as before, but would take place through the electronic payment systems Venmo, Zelle, and PayPal. The use of electronic payment systems in research does have some advantages, including a large user base with pre-existing accounts [9]. Upon completion of the survey with the experimental manipulation (i.e., Survey 2), they were provided with a link to another form where they could provide their preferred payment method, full name, and draw their signature using their finger, stylus, or mouse.

This same process was completed after the interview, but instead of clicking on a link at the end of a survey, they were provided with a link where they could enter their preferred payment method. In addition to their preferred payment method, participants were asked to provide a secondary payment method in the event any issues arose with their preferred method.

4 RESULTS

4.1 Scheduling

The scheduling of the Zoom components of the research study went smoothly. Participants were sent an initial confirmation email after they scheduled the appointment. The system was configured to send them a reminder email both 24 hours and one hour prior to their scheduled time. While there were some no-shows, many of them rescheduled once they were contacted about missing the appointment and most made the rescheduled appointment. Overall, approximately 15% of participants failed to show for their scheduled appointment with most of those rescheduling and successfully participating in the rescheduled appointment.

Emails were sent to participants if they were two minutes or more late for their scheduled appointment. Canned text was prepared ahead of time and simply copied and pasted into an email so that it could be sent quickly. This was effective in preventing what would have been several no-shows since some of these participants did join the Zoom call late and apologized for having forgotten about the appointment.

4.2 Recruitment

Recruitment was successful as we were able to obtain a sample size of 500. This allowed us to include additional treatment groups than originally planned. The sample also represented a broader cross-section of the area than students would have alone [7]. Although a large number of the participant pool identified as being a student, a majority of participants were not. Likewise, those that were students came from multiple universities rather than just a single university as originally planned.

4.3 Technical Components

There did not appear to be any significant issues with respect to having participants watch the videos within the survey platform itself. Only two participants contacted us regarding the survey not advancing after the video. Despite it being explained within the survey itself that it would not advance until the video was finished, it is assumed that they simply tried to fast-forward through the video so as to not have to wait.

The interviewer always enabled the video option so as to develop a stronger rapport and connection with the research participants. For the interview portion of the study, more than half of the participants enabled video on their end as well.

Overall, the quality of the Zoom calls was good. There were a few instances in which the connection was so poor on the participant's end that the interviewer had the participant call-in using a phone instead. This was done after turning off the video portion(s) of the call to try and mitigate any potential bandwidth issues. A few other times participants were not able to correctly configure audio settings on their end or it would take some time for them to figure it out. Some of these participants also ended up calling in using a phone. While network quality was generally excellent for the interviewer's connection, there were a few times in which this did cause some issues with respect to Zoom call quality. In order to mitigate this in future calls, the interviewer used an Ethernet connection rather than WiFi. Additionally, there were some calls

in which appeared to be operating at half-duplex rather than full-duplex. This would result in the interviewer not being able to speak when the interviewee was speaking since it would cut them off. When this would occur, the interviewer would give verbal head nods and try not to give verbal acknowledgments to what the interviewee was stating.

As noted earlier, the Zoom calls that took place for the brief interviews were recorded. Participants were notified that the audio was being recorded so it could be transcribed later and were asked if this was okay with them. All participants provided their consent to the recording. One interesting challenge that occurred with the Callnote software was that it did not successfully record the audio with Bluetooth audio devices. The interviewer ultimately used a USB connected headset, which resulted in successful audio recordings being made on both Zoom and Callnote. There was only one instance of where a successful Zoom recording did not occur. It is believed to have been due to simply forgetting to click the record button on the Zoom interface for this interview. The backup recording performed by Callnote successfully recorded this call. The audio recordings were transcribed using Amazon's AWS platform that includes an *Amazon Transcribe* service. While this was an incredibly inexpensive way to transcribe audio files, they did require some post-processing to make them easier to read for the qualitative coders.

4.4 Participant Compensation

Electronic payments did become a challenge early on. Since a new Venmo account was created for the purpose of this research project, the account was encountering several unspecific errors that were slowing down payments. It is likely that a large number of payments for \$20 each on a new account raised suspicions in the algorithms deployed by Venmo. In an attempt to circumvent this issue, a second account was created. While a handful of successful payments were made with this second account, both accounts ended up being flagged by Venmo since they only allow one account per individual. During this time, some participants were compensated through their stated secondary payment method.

After being threatened with permanent account suspensions for both accounts, one account was eventually reactivated after proving the identity of the account holder by taking a selfie with a driver's license clearly visible in the same picture at their request. This initially was not sufficient for them, but they eventually changed course and even apologized after several pleadings by the account holder. Since most people chose Venmo, this originally posed a major obstacle in the successful execution of the study. However, after this encounter with Venmo there was not a single error or delay.

A minor challenge did surface with the use of Zelle since banks limit the number of transfers or total transaction amounts through this service over a specified time period. This varies by institution. However, this was solved by having more than one Zelle account since they are attached to participating banks rather than a single institution. Since most individuals did not choose Zelle, this was a minor issue that only caused a problem on a couple of days. When this did occur, a different Zelle account was used.

One important note to make with respect to payments through Venmo is that they only allow payments to be made through their app. Thus, it was important to be very careful when entering the unique identifier the research participant provided for their account to ensure no errors were made. In contrast, both Zelle (depending on the specific bank that is being used) and PayPal allow payments to be made through their website. This made it easy to copy and paste the information from the payment form into the PayPal or Zelle platform.

Overall, 67.4% of the participants preferred Venmo as their primary payment method, compared to 18.9% and 13.7% for PayPal and Zelle, respectively. This preference for Venmo in this sample may be related to the average age of the participants (25.8). We conducted an independent samples t-test to determine if this supposition was supported. The 324 participants that preferred Venmo ($M = 24.7, SD = 7.9$) compared to the 170 participants that preferred another payment method ($M = 27.5, SD = 9.8$) were significantly younger in age, $t(287.29) = -3.25, p = .001$.

5 DISCUSSION

Significant challenges were encountered in modifying the original design of the study so that it could continue during the middle of a pandemic. However, these challenges were overcome. There are even advantages to the manner in which this study took place in the online environment. We will discuss three of these advantages.

First, while it did originally create a challenge with respect to recruitment, it ultimately presented us with an opportunity to expand our reach. This included having the study conducted over Zoom since it no longer required participants to physically show up to a specific location multiple times over the course of the study. In the current context individuals generally had greater availability since many were already working from home. Likewise, it appeared people were already generally comfortable with the use of video-conferencing in general, and Zoom in particular.

Second, participant drop-out was low. Longitudinal studies always pose a challenge for the researcher since keeping participants engaged in a study over time places an additional burden on the participant [4]. Perhaps as a function of greater availability of research participants, the convenience of not having to travel somewhere physically, and reasonable compensation for the time commitment involved, participants simply remained engaged at a higher level.

Third, by using electronic payments, the research team did not have to have large sums of cash on-hand at specific physical locations. This provides an advantage from a security standpoint. While the use of Venmo was generally convenient once the account issues were resolved, they do not allow you to enter payments to others through a Web interface. The result is retyping the information they provided as carefully as possible. While we did not encounter payments being sent to the wrong individual, this remains a concern for which significant caution should be exercised.

Looking ahead, conducting in-person research in an online environment did provide some benefits. The benefits became even more apparent once the challenges were resolved. Given the uncertainty with which researchers find themselves in being able to conduct in-person research for the foreseeable future, this is encouraging. While it is important to try and find as many efficiencies as possible

when conducting a large-scale research project, this proved to be particularly advantageous for the online environment. Although some in-person research cannot be converted to the online environment (e.g., studies involving physiological measurements), the experience outlined here suggests that it may be possible to do so in many instances and with great success.

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