

Working From Home: Productivity, Environment & Support

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ABSTRACT

COVID-19 turned the world upside down, and it has changed how many businesses operate. We were interested in learning about office workers who shifted to working from home. Our interest circulated around three themes: productivity, work environments, and employer support. We interviewed 10 participants and surveyed 40 to get insight. For productivity, we uncovered four major factors negatively impacting productivity at home that might explain why people feel like they are working longer hours and are less productive at home. As for the work environment, we found that there are huge changes both in the working environment and the balance between one's personal life and work life. When it came to employer support, participants reported varying levels of satisfaction with mental health support and felt they were not supported enough in terms of their physical health. We proposed design solutions for each segment in our research.

INTRODUCTION

Productivity in the home has been a trending topic in many households, particularly since the COVID-19 pandemic displaced many office workers from their cubicles to working remotely from their homes. With home becoming the space where they both work and relax, many office workers may be struggling with finding a way to separate their job and the privacy of their personal lives. The purpose of this study is to assess how office workers are affected by the abrupt transition to working from home as a result of the pandemic and how employers are supporting employees in their new work environments.

This topic is of substantial relevance as many of us were forced to adapt to working remotely from home due to the pandemic. As noted in our secondary research, a study published by large organizational consultancy Gallup uncovered that 81% of full-time employees say COVID-19 has disrupted their life a great deal or fair amount and that the percentage of employees working from home has increased from 33% to 61% since the start of the pandemic (Harter, 2020).

David Zweig, an organizational behaviour professor at the University of Toronto and advocate for remote working, notes that the pandemic has "ripped a lid off" of flexible working and that working from home is here to stay (MacLeod, 2020). With the growing uncertainty of the future of the office workspace and growing advocacy for flexible working from experts, we want to hear directly from office workers about their experiences working in these new environments and how their employers are supporting them in working from home.

BACKGROUND

As there is the potential for remote working becoming the new norm in the future, this raised questions surrounding employee wellbeing, career advancement opportunities, and accommodation when shifting to a work-from-home environment. The shift from the office to the home as the working environment has caused a significant impact on people's lives, including employee productivity, work environment, and employees' overall sense of work-life balance (Bell, 2020). For instance, employees are not following their daily routine anymore, or at least not as closely. Processes like commuting to work are no longer involved. Besides, an increasing number of employees reported a sense of social isolation and depression (Allen et al., 2015). Work-life balance is one of the hardest things that employees are dealing with when working from home because they are not taking breaks as usual in between work tasks, and some of them do not even eat regularly (Bell, 2020).

In most cases, employer support was seen as inadequate and forced shifts to work from home (WFH) for many employees during the pandemic, which was found to have had a negative impact on both employers as well as on the individual (Deschamps, 2020). However, our research also showed that not all WFH shifts are negative; in certain cases - when remote working is voluntary and the appropriate measures are taken to ensure employees are able to perform their jobs with the proper equipment and training (Harter, 2020), working from home can lead to significant improvements in productivity and employee job satisfaction (National Partnership for Women & Families, & National Employment Law Project., 2020).

For our study, we focus on assessing employee values and employer support and drawing a comparison between individuals working from home and those working at the office during the pandemic. Our goal is to identify correlations between the two through a mix of interviews and survey instruments. To this end, our research questions focus on measuring WFH employees' productivity, overall work-life balance and support received from employers considering the current context of COVID-19.

RESEARCH PLAN

Research Goals

The goal of our research was to identify the pain points that office workers experience while working at home. To uncover these pain points, we researched three aspects of remote working: (1) the worker's feelings of productivity, (2) the significance of the environments that they work in (contrasting the experience of working at home versus the office) and (3) the support employers currently offer to employees to adjust to this new environment.

1. *Productivity*: To assess if office workers feel like working from home has impacted their productivity. We uncovered what factors affect their productivity at home and assess how their productivity has changed since transitioning to working from home.
2. *Work Environments*: To identify the pain points that full-time office workers who transitioned from working in an office every day to working from home during the pandemic are experiencing in their new environments. We contrasted the workers' experiences in the office versus at home to uncover differences that may lead to changes to their mental and physical health.
3. *Employer Support*: To assess the attitudes of full-time office workers who have abruptly transitioned to remote working during the pandemic with regard to the support they have received from their employers to continue their work at home. We identified what measures employers are taking to support their employees through such unprecedented times and what can be improved if there is a gap in employee expectations. Aspects of employer support that we explored included technical, financial, career, wellness, and direction.

Research Questions

Productivity

1. *Perceptions of Productivity*: How productive do office workers feel when working at home relative to at the office?
2. *Factors Impacting Productivity*: What factors have affected their productivity at home, if any?

Working Environments

3. *Physical Environment*: How have office workers modified their physical space at home to accommodate for remote working, if at all?
4. *Work-Life Balance*: How has bringing the office into the home affected workers' work-life balance and daily routines (e.g., eating habits, physical activity, hobbies, work-life balance, etc.), if at all?

Employer Support

5. *Support Received*: In what ways have employers supported office workers in their new working environments (e.g., technical, financial, career, wellness, direction, etc.)?
6. *Employer Expectations*: How have employers changed work expectations to match the added difficulties faced by the worker during the pandemic?
7. *Employee Expectations*: How do employees feel about the support that employers are providing them during the pandemic to support remote working?

Survey & Research Questions

One of our research methods was a survey. The survey included attitudinal and multiple-answer questions as well as some short-answer questions considering the research questions of productivity, working environments, and employer support. These questions were mostly closed-ended and Likert-scaled – there were a few open-ended questions to explain certain ratings.

The first section consisted of self-ratings to compare current productivity to prior productivity to better understand the questions related to the perceptions of productivity from the quantitative perspective. It also included multiple-choice question regarding factors that impact productivity changes to help reveal the common reasons of the productivity changes. The second section aimed to assess Research Questions 3 and 4: employee's efforts that have been paid to upgrade working environment and the severity of disruption on work-life balance. The third part focused on understanding how employers were supporting people in their new work environments and explored the expectations from employers and employees, answering Research Questions 5, 6, and 7.

Interview & Research Questions

To obtain in-depth responses from employees working at home, we conducted interviews to collect qualitative data. Each interview consisted of a semi-structured set of 17 questions.

The first section primarily focused on Research Questions 1 and 2 by gathering the attitudinal responses on general differences between work on site and WFH, perceptions of productivity and motivations and reasons of the productivity changes. It was followed by the section that measured the

new work environments they are in, concerns, and challenges with working in the new physical environment and impacts on their wellness (physical health and mental health). Those questions aimed to collect the participant’s insights regarding Research Questions 3 and 4. The last part was designed to collect the qualitative data answering Research Questions 5, 6, and 7. It consisted interview questions of employer support received, employer expectation, and employee expectation.

Method Summary

Method	Participant Description	Number of Participants
Online Survey	Full time office workers working from home due to COVID-19	40 respondents
Semi-Structured Interview	Full time office workers working from home due to COVID-19	10 interviewees

Figure 1. Summary of research methods and participants.

Figure 1 summarizes the methods used in the research study, brief descriptions of the participants, and number of individuals surveyed and interviewed. We chose surveys to gain a better general understanding of participants' attitudes while reaching a broader audience. We believe that this method allowed us to leverage our limited time and resources by providing a large initial data pool for us to analyze. The disadvantage of surveys is that they are structured and do not allow for additional probing on issues.

Interviews were conducted to address the downfalls of surveys. It allowed for more depth in understanding our subjects' experiences. With a semi-structured interview, there was greater flexibility to further explore issues that interviewees mentioned and to ask more open-ended questions. Furthermore, with the COVID-19 pandemic, surveys and interviews were safe methods of research to implement while remaining socially distant.

At all times, we issued consent forms as well as anonymized participant data and stored it in a password-protected system. Participants had the right to not answer questions that they were uncomfortable with and to withdraw from the study at any point.

Recruitment

Participants are full-time office workers who are not self-employed or freelancers. Prior to the pandemic lockdown, they have worked in an office at least 80% of the time. This criterion has allowed the inclusion of people who have had flexible working arrangements or had to travel to other locations for work. Currently, and for the foreseeable future, they work from home at least 80% of the time because of the COVID-19 pandemic. This criterion has allowed the

inclusion of people who are either required to or allowed to work in their offices.

To summarize, inclusion in this study required all of the following criteria:

1. Full-time employee (at least 35 hours per week)
2. Primary workplace had been a company office (at least 4 out of 5 workdays per week)
3. Primary workplace is now home (at least 4 out of 5 workdays per week)
4. COVID-19 pandemic is the reason for working from home

In addition, exclusion from this study involved any of the following criteria:

1. Freelance employee
2. Primarily worked from home prior to pandemic (at least 4 out of 5 workdays per week)
3. Not able to speak, read, or write English proficiently

Interviewees were recruited from personal networks. Potential interviewees were contacted because they were believed to meet the inclusion criteria and not be disqualified by any exclusion criteria. They were contacted in person or by email, Facebook, LinkedIn, WeChat, and WhatsApp. A recruitment poster as well as templates for email messages and social media posts were developed to recruit interviewees (see Appendix I), but ad hoc writing was favoured because interviewees were personal contacts. Consent forms with pre-screening text were emailed to interviewees and they replied to confirm their informed consent.

Survey respondents were recruited from personal networks and extended networks. All interviewees were invited, by email, to complete the Google Forms web survey during the recruitment process or after their interviews. In some cases, they were invited to distribute the survey among their networks. Templates for email messages and social media posts were developed to recruit respondents (see Appendix I), but ad hoc writing was favoured in direct communication with personal contacts. In any case, the survey link was shared by way of direct and indirect communication using email, Facebook, Instagram, LinkedIn, Slack, and WeChat. The web survey included the consent form and conditional processing to ensure that only eligible respondents could participate.

PILOT TESTING

After designing the survey and interview instruments, we conducted pilot testing to check our scripts for any major issues. The pilot testing session included simulating full sessions with note taking and debriefing with testers after the session to note any issues with the procedure. Testers were

asked to think aloud as they did the survey, noting any questions that were confusing. Pilot test data was omitted from the analysis portion of this report. We conducted pilot testing with three participants.

(*Note: The question numbers indicated below refer to the original version of the survey and interview before integrating the changes from the pilot testing.)

Pilot Tester 1 (Interview Only)

The first pilot tester, a co-worker of a team member, was recruited in person and subsequently contacted by email. This individual met the pre-screen criterion of working in an office full-time (at least 4 days per week) prior to COVID-19 but failed to meet the second criterion of working from home at least 4 days per week.

Interview Results

The interview lasted about 49 minutes because the interviewer asked follow-up questions that were off script. This pilot tester liked the three-part structure of the interview because it was organized. She responded to Questions 1.1. and 1.4. with comments that they were "interesting" and reiterated this thought during a post-interview feedback session. She asked Questions 1.1. and 3.3. to be repeated: the wording of the former seemed to be confusing and the latter seemed to be a repeat of a prior question in Part 2 (i.e., the follow-up question to Question 2.1.) Question 2.3. was unclear, so it was removed from the script. The purpose of the study, although stated in the introduction, was not clear to this pilot, who asked about the purpose at the end. During the feedback session, she suggested that the purpose be made more explicit, and she re-iterated that some questions seemed to repeat, although she acknowledged that the themes overlapped.

Interview Changes from Pilot Tester 1

- Question 2.3: We removed the question, "How has working from home changed your perception about your working environment?" We learned from the pilot that the question was confusing. We decided to take it out because it was not directly related to our research goals and to cut down on time.
- Revised two warm-up questions to include primers for short answers from participants (e.g., "In a few sentences," "quick overview"); we realized that the original wording could invite longer and more detailed answers depending on participants' personalities.
- Simplified questions that participant had asked to be repeated and other questions, as needed.
- Made one cool-down question optional for timing purposes because it could invite long and detailed answers.
- At the end of the script, we added an invitation to complete the web survey.

Pilot Tester 2 (Survey Only)

The second pilot tester, also a co-worker of a team member, was recruited in person and subsequently contacted by email. This individual also met the pre-screen criterion of working in an office full-time (at least 4 days per week) prior to COVID-19 but failed to meet the second criterion of working from home at least 4 days per week.

Survey Results

The survey was completed in a shorter period (7 min) than we expected (15 min). This pilot tester found the first page to be very wordy and certain questions to be ambiguous. He noted various discrepancies between the text and processes of the survey. For example, some aspects were said to be optional, but they were apparently required for submission.

Survey Changes from Pilot Tester 2

- Informed Consent Section: removed the phrase, "including my image and voice" because (as noted by this tester), it did not apply to the survey
- Question 1.5: Added the phrase "subjective evaluations" to clarify the phrase, "Perceptions of my productivity," which the tester said "might be confusing to some"
- Question 1.4: Added the phrase "objective evaluations" to clarify the phrase "Measurements of my productivity" and to match the revision to Question 1.5
- Question 2.6: Removed the 'required' attribute because the pilot answered, "Neither agree or disagree" and was still required to input an answer, despite the survey instruction
- Question 3.11 & 3.13: Changed the wording to make the prompts seem more like an invitation ("Feel free to explain") and less like an order disguised as a request ("Please explain") because this pilot wondered if we needed to ask people to explain their answers and suggested removing these questions; also removed the word "above" at the end of prompts.

Pilot Tester 3 (Interview & Survey)

The third pilot tester, a family member of team member, was recruited in-person. The pilot interview and survey were scheduled and conducted in-person. This individual met both screening criteria of working in an office full-time (at least 4 days per week) prior to COVID-19 and working from home full-time (at least 4 days per week).

Survey Results

The tester completed the survey in 8 minutes, which is just over half the time we expected it to take (15 minutes). From this information, we could add more questions to fill the time, however the tester also indicated that the survey felt a little bit long, so we decided to not add any more questions. As he completed the survey, he was instructed to think aloud in order to identify confusing questions and provide comments on the instrument. As the pilot took place, each question that

he commented on was flagged with notes on the problem. In general, his comments were related to the clarity of the wording of questions, the order of the questions, and that there were too many open-answer parts. He recommended being more directed and specific with the wording of the questions; he also mentioned changing the open-answer questions to have options to choose from with an "other (please specify)" option instead. We carefully considered his feedback and adjusted the survey accordingly.

Survey Changes from Pilot Tester 3

- Open Response Feedback: Made open-answer questions optional instead of mandatory. Took out open-answer Question 1.7, which accompanied Question 1.6, because it was already explored in depth in the interview.
- Question 1.6: Changed to a Likert scale question with the statement, "I feel more productive when working at home than at the office."
- Question 1.8: Moved the "my productivity was not impacted" near the end of the list just before "prefer not to answer" and other options. Applied the same logic to Question 3.2.
- Question 2.7: Changed "The same" to "equally by necessity and choice" and added the "I did not make any changes" option.
- Question 3.3: Changed to "I have not received support from my employer."
- Question 3.4: Changed from "It is more challenging to work at home than it is at the office" to "It is more challenging to work at home than at the office."
- Question 3.10: Reworded it to "Overall, how dissatisfied or satisfied are you with the support you received from your employer to work from home during the pandemic?"

Interview Results

The pilot interview with the third pilot tester took 22 minutes and 39 seconds. As the interview was conducted, we took notes on his comments and flagged the questions that needed to be fixed. In contrast with the survey, the tester had a less positive experience with the interview. He was frustrated with the poor wording, flow, and redundancy in the questions. There were several instances where responses from earlier questions answered later questions, indicating an issue of redundancy.

Interview Changes from Pilot Tester 3

- Question 1.1: Added the word "general" so that the question is broader and not just about productivity. This question is meant to segue from the introduction into the body. We want to learn major differences and then understand the implications on productivity in subsequent questions.
- Questions 1.2, 1.3, and 1.4: 1.1 was clarified to be general and not specifically about productivity. Reworded these questions to clearly indicate that 1.2 is

about feelings of productivity, 1.3 is about teamwork and 1.4 is about motivation.

- Question 4.1: Took out the "And why?" because why they define productivity is not related to our research goals.
- Question 2.1: Reworded the follow-up questions to better pertain to just technical equipment support, reducing overlap with later questions. Section 3 goes more in depth about employer support. Furthermore, upon reviewing the additional questions, we decided to move one of them to the beginning as it was a more appropriate opener for the section; some of the follow-up questions from the original 2.1 question were moved up to the new question as they were more appropriate.
- Question 2.2: Removed the disorganized workday question as it does not pertain to research goals. Took out "How do you normally tackle those challenges?" from follow up question in 2.2 and split it out to a second follow up question about how they feel about it.
- Question 2.3: Reworded and simplified it to ask about personal health with a prompt if they were unsure.
- Question 4.4: Removed it because it would be answered in 2.1.
- Question 3.2: Changed it to a follow-up question on the condition they indicate they receive support from employer in 3.1. Rejigged 3.1 follow-up to reduce redundancy, improve logic in question order, and simplify wording.
- Question 4.5: Removed this question due to redundancy.

METHOD 1: SURVEY

Our first research method involved an online survey. The instrument was deployed by way of Google Forms and comprised of 30 closed and open-ended questions.

Procedure

Before beginning the survey process, participants were asked to provide their consent in allowing us to collect, analyze, and present their data as part of our final report. A copy of the informed consent form can be found in Appendix II. Once this was completed, the next step entailed answering a series of screening questions to verify that they met our recruitment criteria. If they did, they would be able to answer the rest of the survey, which was composed of three main sections: Productivity (7 questions), Work Environments (7 questions), and Employer Support (13 questions). Finally, after answering all survey questions, participants were presented with a message thanking them for their time and reminding them how their data will be used.

Participants

We received 44 survey responses, of which 41 passed the pre-screen, but only 40 were submitted with complete

responses. To qualify for the survey, respondents needed to consent to the study and meet all of the following criteria:

1. Be a full-time (35+ hours per week) office worker.
2. Prior to COVID-19, the respondent was working in an office at least 4 out of 5 workdays per week.
3. Is currently working at home for at least 4 out of 5 workdays per week due to COVID-19.

Results

The survey has three main sections: productivity, work environment and employer support. Please refer to Appendix III for the survey template.

Part 1: Productivity

Questions 1.1 to 1.6 are Likert scale questions where the respondent reads a statement and indicates their degree of agreement for each statement. Accompanying this section is a stacked bar graph (Figure 2) and table summarizing the frequency counts and percentages (Figure 3) of the responses for each statement:

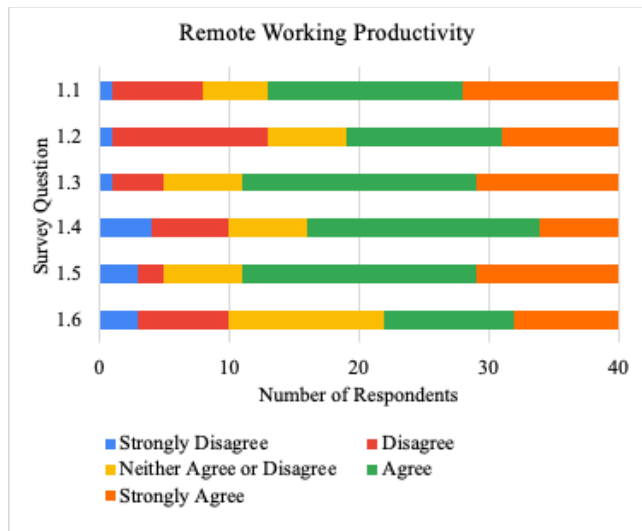


Figure 2. Stacked bar graphs summarizing responses for survey questions 1.1-1.6.

Question	Frequency Count (Percentages)				
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1.1. I feel like I am working on my job for more hours at home than when I was at the office.	1 (3%)	7 (18%)	5 (13%)	15 (38%)	12 (30%)
1.2. I feel like I have more office work to do at home than when I was at the office.	1 (3%)	12 (30%)	6 (15%)	12 (30%)	9 (23%)
1.3. Feeling productive is my top priority.	1 (3%)	4 (10%)	6 (15%)	18 (45%)	11 (28%)
1.4. Measurements (i.e. objective evaluations) of my productivity are important to my organization.	4 (10%)	6 (15%)	6 (15%)	18 (45%)	6 (15%)
1.5. Perceptions (i.e. subjective opinions) of my productivity are important to my organization.	3 (8%)	2 (5%)	6 (15%)	18 (45%)	11 (28%)
1.6 I feel more productive when working at home than at the office.	3 (8%)	7 (18%)	12 (30%)	10 (25%)	8 (20%)

Figure 3. Chart summarizing frequency count and percentages for responses in survey questions 1.1-1.6.

Shown in Figure 4 are central tendency measures for the responses from Questions 1.1-1.6:

Question	Median	Mode(s)
1.1. I feel like I am working on my job for more hours at home than when I was at the office.	Agree	Agree
1.2. I feel like I have more office work to do at home than when I was at the office.	Agree	Agree /Disagree
1.3. Feeling productive is my top priority.	Agree	Agree
1.4. Measurements (i.e., objective evaluations) of my productivity are important to my organization.	Agree	Agree
1.5. Perceptions (i.e., subjective opinions) of my productivity are important to my organization.	Agree	Agree
1.6 I feel more productive when working at home than at the office.	Neither Agree or Disagree	Neither Agree or Disagree

Figure 4. Chart summarizing central tendency measures for responses in survey questions 1.1-1.6 regarding feelings of productivity.

The following are the key findings from the Likert Scale Questions:

- 27 respondents out of 40 felt that they are working more hours at home than the office (Question 1.1). Notably, only 21 respondents felt that they had more work to do at home than at the office (Question 1.2). These numbers could be an indication that some people feel like they are working longer with the same or less volume of work, indicating challenges in productivity at home.
- Question 1.2 produced a median of Agree, and two modes Disagree and Agree both had the highest frequency counts at 12. The central tendency measures are inconsistent for this question, indicating that respondents did not have the same degree of agreement on the statement “I feel like I have more office work to do at home than when I was at the office”. In other words, to get a better assessment on this statement, we likely need to collect more responses.
- 11 respondents strongly agreed that perceptions of productivity (Question 1.5) are valued more in organizations than objectively measuring productivity (where only 6 respondents strongly agreed to Question 1.4).
- More than half of the respondents felt that they were either less productive or the same level of productivity working at home compared to the office (22 out of 40 strongly disagreed, disagreed or were neutral to Question 1.6). This is shown in the median and mode values for Question 1.6 are both Neither Agree or Disagree.

The last question (1.7) in the productivity section of the survey was a multiple response (select all that apply) question for respondents to indicate what factor(s) impacted their productivity while working at home. Figure 5 is a chart and Figure 6 is a bar graph summarizing the responses in terms of frequency count and percentages:

1.7 – What factors below have impacted your productivity while working at home?

(Select all that apply)

Factors	Frequency Count	Percentage
Prefer not to answer	0	0%
Internet Distractions	1	3%
Greater Autonomy	1	3%
Productivity Not Impacted	8	20%
Friends & Family	15	38%
Technology	17	43%
Physical Environment	18	45%
Mental Health	22	55%

Figure 5. Chart summarizing frequency count and percentages for responses in survey question 1.7.

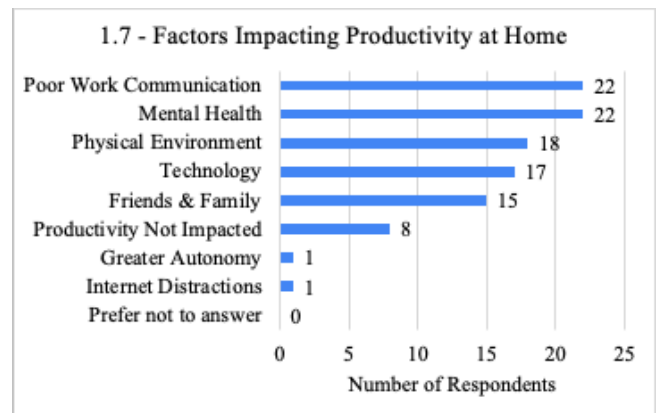


Figure 6. Bar graph summarizing counts for question 1.7, indicating factors impacting productivity at home.

Question 1.7 uncovered that mental health and poor work communication impact the work from home productivity of more than half of the respondents (22 out of 40 or 55%). Other top responses included distractions from their physical home environment (18 or 45%), lack of technological infrastructure at home to support working needs (17 or 43%), and being sidetracked by the needs of their family or friends (15 or 38%). These aspects could be the factors that are making people feel like they are working longer (Question 1.1).

Part 2: Work Environment

Questions 2.1, 2.2, 2.3, and 2.5 are Likert scale questions where the respondent reads a statement and indicates their degree of agreement for each statement. Figure 7 is a chart and Figure 8 is a stacked bar graph summarizing the frequency counts and percentages of the responses for each statement:

Question	Frequency Count (Percentages)				
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
2.1. I am able to separate my professional and personal life while working from home.	4 (10%)	7 (18%)	6 (15%)	13 (33%)	10 (25%)
2.2. Working from home has disrupted my work-life balance.	5 (13%)	15 (38%)	5 (13%)	8 (20%)	7 (18%)
2.3. I have made changes to my home environment to accommodate for remote working.	2 (5%)	10 (25%)	2 (5%)	17 (43%)	9 (23%)
2.5. I have made changes to my daily routines to accommodate for remote working.	1 (3%)	6 (15%)	8 (20%)	16 (40%)	9 (23%)

Figure 7. Table summarizing frequency counts and percentages for Likert style questions related to work environments (Questions 2.1-2.3 and 2.5).

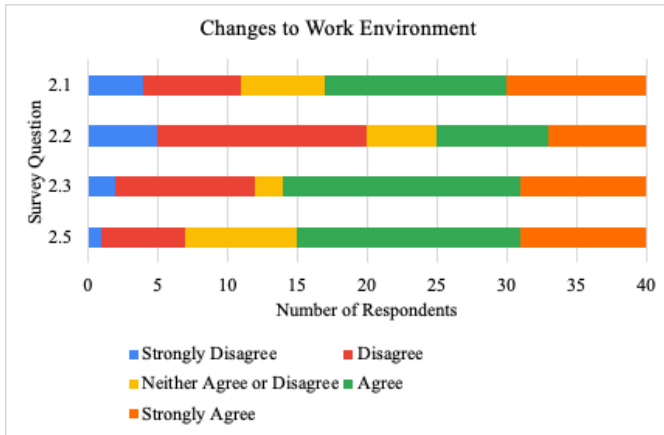


Figure 8. Stacked bar graph summarizing counts for questions 2.1-2.3 and 2.5 regarding attitudes towards changing personal work environments.

Figure 9 are central tendency measures for the responses from questions 2.1, 2.2, 2.3, and 2.5:

Question	Median	Mode
2.1. I am able to separate my professional and personal life while working from home.	Agree	Agree
2.2. Working from home has disrupted my work-life balance.	Neither Agree or Disagree	Disagree
2.3. I have made changes to my home environment to accommodate for remote working.	Agree	Agree
2.5. I have made changes to my daily routines to accommodate for remote working.	Agree	Agree

Figure 9. Table summarizing central tendency measures for questions 2.1-2.3 and 2.5.

Below are the key findings from the Likert Scale Questions:

- Of 40 respondents, 23 (58%) felt that they are able to separate their professional and personal lives when working from home, while only 11 respondents reported feeling the opposite (Question 2.1). Similarly, when asked if working from home has disrupted their work-life balance (Question 2.2), the majority of respondents stated that it hasn't.
- Question 2.3 asked participants about the changes made to their home environments. Our findings show that 26 out of 40 respondents (66%) have made changes to their home environments while only 12 (30%) indicated they have not. Notably, of these 12 respondents, only 8 later confirmed (Question 2.4) that they did not feel they needed to make any changes. Suggesting that for the remaining 4, there were additional factors in play influencing their decision not to make changes.

- Lastly, when asked if their daily routines had been affected to accommodate for remote working (Question 2.5), 25 out of 40 participants (63%) agreed that they have. While this number may suggest that such changes may negatively affect respondents' work-life balance and/or their ability to separate their professional and personal lives, Questions 2.1 and 2.2 reveal that for the majority, the opposite is true.

Questions 2.4 and 2.6 asked participants to expand on their previous responses through an open-ended question format. To analyze these findings, collected responses were coded to identify common themes and frequency counts were conducted to visualize this information. Figure 10 is a chart and Figure 11 is a bar graph summarizing the responses in terms of frequency count. Note that no percentages are provided here since frequency counts are based on total mentions (i.e. one participant may have mentioned multiple things).

2.4. If you answered "Agree" or "Strongly Agree" to the previous question, please indicate what changes you made to your home environment. If you answered "Strongly Disagree" or "Disagree", please explain why not:
(Open Answer)

Changes to Home	Frequency Count	Percentage
New computer	1	3%
New mouse	1	3%
New keyboard	2	5%
Upgraded internet	3	8%
New desk	5	13%
New office chair	6	15%
No changes needed	8	20%
New monitor	12	30%
Modified room into workspace	16	40%

Figure 10. Table summarizing frequency counts and percentages for changes made to the home to accommodate for remote working.

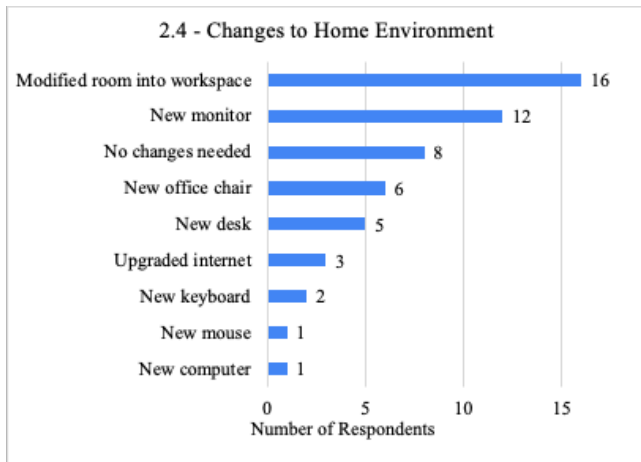


Figure 11. Bar graph summarizing frequency counts and percentages for changes made to the home to accommodate for remote working.

Question 2.4 uncovered that respondents' most common change to their home environment did not involve the purchase of new equipment. Instead, the most common mention across respondents involved rearranging furniture or repurposing existing rooms (i.e., modifying a room into a workspace). Not surprisingly, respondents also expressed purchasing new equipment when making changes to their home environment as a result of remote working; monitors (12), office chairs (6), and desks (5) were the most common mentions of this case.

When analyzing respondents' changes to daily routines (Question 2.6, Figure 12 and 13), respondents most commonly mentioned a change to their sleeping schedules (13 mentions). Aside from this change, other popular mentions included exercising more at home (7 mentions), less commuting (6 mentions) and longer work hours (4 mentions).

2.6. If you answered "Agree" or "Strongly Agree" to the previous question, please indicate what changes you made to your daily routines. If you answered "Strongly Disagree" or "Disagree", please explain why not:
(Open Answer)

Changes to Daily Routines	Frequency Count	Percentage
Started working on weekends	1	3%
Working less hours	1	3%
No change	1	3%
More time for breaks	2	5%
Started eating healthier	3	8%
Working more hours	4	10%
No more commuting	6	15%
Exercise more	7	18%
Adjusted sleep schedule	13	33%

Figure 12. Table summarizing frequency counts and percentages of respondents who changed their daily routines as a result of working from home (Question 2.6).

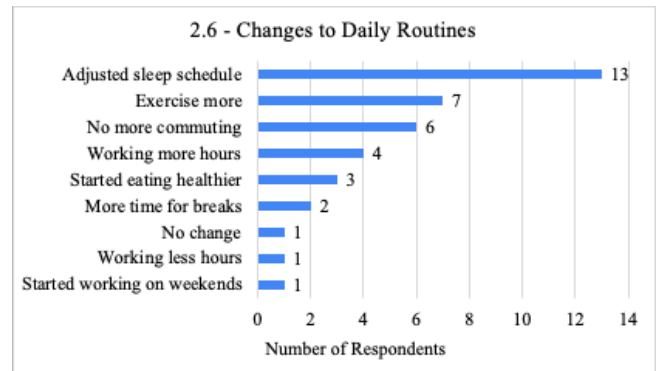


Figure 13. Bar graph summarizing frequency counts and for changes made to daily routine as a result of remote working.

Question 2.7 is a Likert scale question that asked participants to express what factor (necessity or choice) had the most influence in their decision to adjust their home environment and to what degree. Figure 14 is a chart and Figure 15 is a stacked bar graph summarizing the responses for the statement in Question 2.7:

Question	Frequency Count (Percentages)					
	I did not make any changes	Mostly more by choice	Somewhat more by choice	Equally by necessity and choice	Somewhat more by necessity	Mostly more by necessity
2.7. If you have made notable changes to your environment and/or routines, have they been more by necessity or by choice?	4 (10%)	7 (18%)	4 (10%)	12 (30%)	8 (20%)	5 (13%)

Figure 14. Table summarizing frequency counts and percentages for influence on work environment changes (Question 2.7).

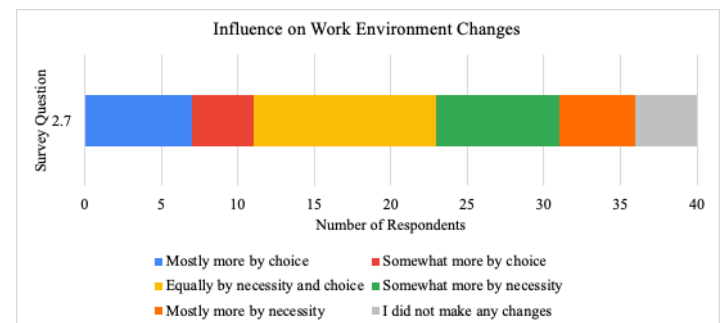


Figure 15. Bar graph summarizing frequency counts for changes for influence on work environment changes (Question 2.7)

Figure 16 showcases the central tendency measures for the responses to question 2.7:

Question	Median	Mode
2.7. If you have made notable changes to your environment and/or routines, have they been more by necessity or by choice?	Equally by necessity and choice	Equally by necessity and choice

Figure 16. Table summarizing central tendency for influence on work environment changes (Question 2.7)

When asked about the influence behind their home working environment changes, Question 2.7 revealed a balanced distribution of responses between “necessity” (33% of respondents) and “choice” (28% of respondents), while the most popular answer among respondents was “equally by necessity and choice” (12 out of 40 participants). In contrast, only 4 out of 40 participants (or 10%) indicated that no changes were made.

Part 3: Employer Support

3.1. During the COVID-19 pandemic, how frequently do you work overtime (i.e., working additional hours outside of required working hours) at home?

(Select One)

Overtime	Frequency Count	Percentage
Once a month	7	17.5%
Once a week	9	22.5%
Less than once a month	8	20%
Multiple times a week	16	40%

Figure 17. Table summarizing frequency counts and percentages for how often the participant engaged in overtime work (Question 3.1)

- As shown in Figure 17, of 40 total respondents, 32 (80%) worked overtime at least once per month; half of them (16 of 32) reporting working overtime on multiple days per week. The other half reported working overtime either once per week (9 of 32) or once per month (7 of 32).
- A minority of respondents (8 of 40 or 20%) reported working overtime less than once per month, on average.

3.2. If you work overtime, how are you compensated by your employer for the additional hours?

(Select all that apply)

Overtime	Frequency Count	Percentage
I was paid for the additional time worked	1	2.5%
I was allocated extra time off to use on a future date	12	30%
I was not compensated, and my employer was aware of my overtime	12	32.5%
I was not compensated, and my employer was not aware of my overtime	10	25%
I did not work overtime	5	12.5%

Figure 18. Table summarizing frequency counts and percentages for how employees are compensated for overtime. (Question 3.2)

Note: For Question 3.2, the survey allowed respondents to select multiple answers, including ones that should have been mutually exclusive (e.g., "I did not work overtime") with respect to other ones.

- As shown in Figure 18, of the 34 respondents who reported not being paid for their overtime work, 12 (35%) reported being compensated with extra time-off for future use.
- Among 35 overtime-reporting respondents, 25 (71%) explicitly or implicitly reported that their employers know about their overtime work. About half of those 25 respondents were compensated in some way (with overtime pay or future time-off), and the other half were not compensated.

3.3. What types of support has your employer provided you since the start of the pandemic?
(Select all that apply)

Overtime	Frequency Count	Percentage
Technical (hardware access, software access, expert help)	24	60%
Financial (stipends, expenses, coverage)	12	30%
Career (mentorship, networking opportunities, skills development)	9	22.5%
Wellness (info/training, networking opportunities, skills development)	16	40%
Direction (expectations, updates, timelines)	19	47.5%
I have not received support from my employer	4	10%
Prefer not to answer	0	0%
Nothing, my employer can eat shit.	1	2.5%
Technical support was minimal	1	2.5%
The employer feels powerless over the employee and will therefore try to call long meetings to micromanage.	1	2.5%

Figure 19. Table summarizing frequency counts and percentages for types of employer support received during the pandemic. (Question 3.3)

Note: For Question 3.3, the survey allowed respondents to select multiple answers, including one that should have been mutually exclusive ("I have not received support from my employer") with respect to other ones.

- As shown in Figure 19, technical support and directional support were the most common types of support. That is, 24 of 40 (60%) reported getting technical support and 19 of 40 (48%) reported getting directional support. The extent of support types was not examined, although one person who reported getting technical support also noted that it "was minimal."
- Respondents' employers that offer some type of support were more than likely to offer more than one type of support. A cursory look at the raw data show that 27 respondents (68%) report getting at least two types of employer support.
- A handful of respondents (4 of 40 or 10%) reporting getting no support from their employers.

Questions 3.4 to 3.9 contain a series of statements that survey respondents had to indicate their degree of agreement using a Likert scale ranging from strongly disagree, disagree,

neither agree or disagree, agree and strongly agree. Figure 20 is a chart and Figure 21 is a stacked bar graph summarizing the frequency counts and percentages of the responses for each statement:

Question	Frequency Count (Percentages)				
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
3.4. It is more challenging to work at home than at the office.	9 (23%)	7 (18%)	6 (15%)	10 (25%)	8 (20%)
3.5. My employer has made a satisfactory effort to support my mental health.	7 (18%)	7 (18%)	5 (13%)	18 (45%)	3 (8%)
3.6. My employer has made a satisfactory effort to support my physical health.	9 (23%)	9 (23%)	11 (28%)	9 (23%)	2 (5%)
3.7. My employer has reasonable work expectations during the pandemic.	2 (5%)	2 (5%)	10 (25%)	20 (50%)	6 (15%)
3.8. My employer has communicated a clear timeline about its future plans.	4 (10%)	7 (18%)	6 (15%)	17 (43%)	6 (15%)
3.9. I felt supported by my employer throughout the COVID-19 transition to work from home.	2 (5%)	8 (20%)	6 (15%)	17 (43%)	7 (18%)

Figure 20. Table summarizing frequency counts and percentages attitudes towards employer support. (Questions 3.4-3.9)

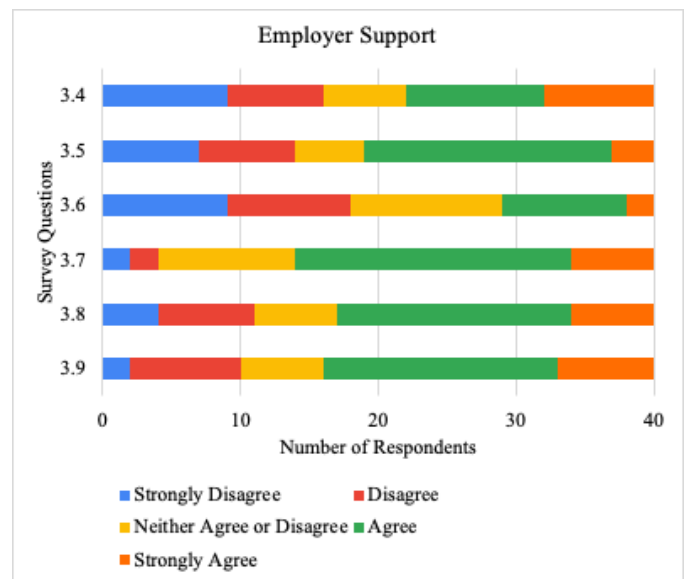


Figure 21. Stacked bar graph summarizing frequency counts of attitudes towards employer support. (Questions 3.4-3.9)

Figure 22 are central tendency measures for the responses from questions 3.4 to 3.9:

Question	Median	Mode
3.4. It is more challenging to work at home than at the office.	Neither agree or disagree	Agree
3.5. My employer has made a satisfactory effort to support my mental health.	Agree	Agree
3.6. My employer has made a satisfactory effort to support my physical health.	Neither agree or disagree	Neither agree or disagree
3.7. My employer has reasonable work expectations during the pandemic.	Agree	Agree
3.8. My employer has communicated a clear timeline about its future plans.	Agree	Agree
3.9. I felt supported by my employer throughout the COVID-19 transition to work from home.	Agree	Agree

Figure 22. Table summarizing central tendency of attitudes towards employer support. (Questions 3.4-3.9)

Question 3.4: “It is more challenging to work at home than at the office.”

- Of the 40 respondents, 18 either agreed or strongly agreed with this notion (10 and 8, respectively) and 16 either disagreed or strongly disagreed (7 and 9, respectively).
- There was relatively uniform distribution among the five possible options. The difference between the most and least commonly selected options is 4: 10 respondents strongly agreed with the statement in question and 6 respondents neither agreed or disagreed with it. A larger sample might yield larger differences among the options.

Question 3.5: “My employer has made a satisfactory effort to support my mental health.”

- Regarding their employers’ support for mental health, slightly more than half of all respondents either agreed or strongly agreed with a “satisfactory” assessment (21 of 40 or 53%). For comparison, slightly more than one-third either disagreed or strongly disagreed (14 of 40 or 35%) with the statement in question.

Question 3.6: “My employer has made a satisfactory effort to support my physical health.”

- Among the 40 respondents, a total of 11 (28%) either agreed (9) or strongly agreed (2) with a “satisfactory” assessment of their employers’ support for physical

health. By comparison, 18 of 40 (45%) respondents either disagreed (9) or strongly disagreed (9) with it.

- Interestingly, 11 participants (28%) neither agreed nor disagreed with the statement in question.

Question 3.7: “My employer has reasonable work expectations during the pandemic.”

- About two-thirds (26 of 40 or 65%) of respondents either agreed (20) or strongly agreed (6) with the notion that their employers have reasonable work expectations.
- One-quarter (10 of 40) of respondents were neutral about the statement in question. Only one-tenth (4 of 40) either disagreed or strongly disagreed with this statement.

Question 3.8: “My employer has communicated a clear timeline about its future plans.”

- About half of respondents (23 of 40) either agreed (17) or strongly agreed (6) with the notion that their employers have communicated clear timelines about future plans. This combined group did not significantly outnumber the combined group of those who disagreed (7), strongly disagreed (4), or were neutral (6) with the notion in question.

Question 3.9: “I felt supported by my employer throughout the COVID-19 transition to work from home.”

- The distribution of responses to Question 3.9 is nearly identical to that of Question 3.8. Compared to the responses for Question 3.8, one more person strongly agreed with the statement in question, one more person disagreed with it, and two less people strongly disagreed.

Questions 3.10 and 3.11 explore how satisfied the employee is with the support they received from their employer. Question 3.10 is a Likert style question with a scale ranging from very dissatisfied, dissatisfied, neither satisfied nor dissatisfied, satisfied to very satisfied. Figure 23 is a chart summarizing frequency counts as well as percentages, and Figure 24 a stacked bar chart for 3.10:

3.10. Overall, how dissatisfied or satisfied are you with the support you received from your employer during the pandemic to work from home?

(Select One)

Overtime	Frequency Count	Percentage
Very dissatisfied	3	8%
Dissatisfied	5	13%

Neither satisfied nor dissatisfied	7	18%
Satisfied	17	43%
Very satisfied	8	20%

Figure 23. Table summarizing frequency and percentages of degree of satisfaction towards employer support. (Question 3.10)

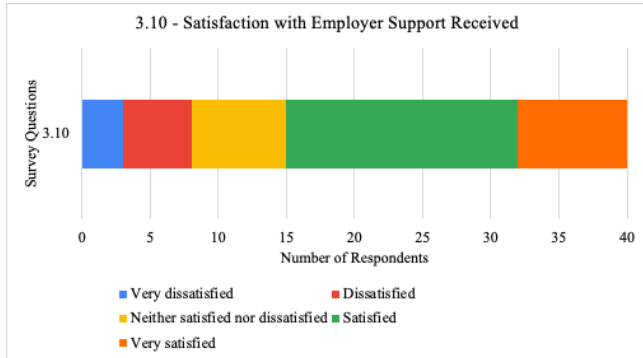


Figure 24. Stacked bar chart summarizing frequency of degree of satisfaction towards employer support. (Question 3.10)

Figure 25 are the central tendency measures for Question 3.10:

Question	Median	Mode
3.10. Overall, how dissatisfied or satisfied are you with the support you received from your employer during the pandemic to work from home?	Satisfied	Satisfied

Figure 25. Table summarizing central tendency of degree of satisfaction towards employer support. (Question 3.10)

- The distribution of responses to Question 3.7, which also reflect employer culture, is somewhat comparable to those of Questions 3.8 to 3.10. However, it is not as uniformly consistent with the responses of those three later questions.

Question 3.11. supports 3.10, by allowing the survey respondent to elaborate on their ranking. Among the 40 respondents, 25 wrote comments to explain their overall satisfaction ratings. Comments vary in terms of detail and positivity. The main themes of these comments are the following:

- *Equipment and other extra costs:* 13 respondents mentioned (dis)satisfaction with office equipment, other expenses, or stipends and benefits
- *Employer-worker communication:* 9 respondents mentioned (dis)satisfaction with timelines for returning to offices, regular updates, or two-way dialogue
- *Employer accommodation and awareness:* 8 respondents mentioned (dis)satisfaction with employer

openness and flexibility, understanding of worker challenges, or consideration for mental and general wellness

- *Employer culture, leadership, and management:* 6 respondents mentioned (dis)satisfaction with work expectations, planning and scheduling, or practices

The following are some illustrative quotes:

"Not providing office equipment necessary for working from home. Not providing the exact guidelines on when we are expected to be back. Slight pressure to start coming back to office."

"I am appreciative that my employer has allowed us to fully work from home to promote social distancing. That being said my employer can improve on areas such as having regular updates, consistent and clear timeline updates regarding return to office requirements and providing financial support for home office equipment."

"As an organization, my company has gone above and beyond to support all adjustments that have been required by way of providing more insurance coverage, days off, equipment and communication."

"Other than provide us with laptops, they almost expect MORE from us now that we're working from home without considering the toll this pandemic is having on our mental health, I'm burnt out"

"Wish there was more clarity on work expectations, though this has been sort of an ongoing issue since before the pandemic. I don't recall seeing much regarding mental health or increased benefits or any offers for if I buy ergonomic tools for working at home"

Question 3.12 and 3.13 assess how employer support meets the expectations of employees. Question 3.12 "How supportive was your employer compared to your expectations?" has a Likert rating scale of much less supportive, somewhat less supportive, as expected, somewhat more supportive and more supportive. Figure 26 is a chart summarizing frequency counts, Figure 27 is a stacked bar graph summarizing results, and Figure 28 is a chart showcasing central tendency measures:

3.12. How supportive was your employer compared to your expectations?

(Select One)

Overtime	Frequency Count	Percentage
Much less supportive	3	8%
Somewhat less supportive	3	8%
As expected	23	58%
Somewhat more supportive	3	8%
Much more supportive	8	20%

Figure 26. Table summarizing frequency counts and percentages for employee expectations of employee support. (Question 3.12)

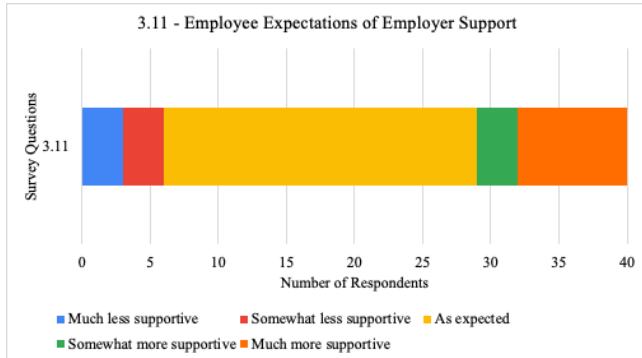


Figure 27. Stacked bar graph summarizing frequency counts for employee expectations of employee support. (Question 3.12)

Question	Median	Mode
3.12. How supportive was your employer compared to your expectations?	As expected	As expected

Figure 28. Table summarizing central tendency measures for employee expectations of employee support. (Question 3.12)

- A total of 34 respondents (85% of all respondents) reported that their employers have either met their expectations of support (23 or 58%) or exceeded their expectations (11 or 28% percent). However, as previously noted, only 25 (63%) respondents reported being either satisfied or very satisfied with their employers' support.
- Six of the 40 respondents reported that their employers have been somewhat less supportive (3) or much less supportive (3) than expected.
- Considering the results Question 3.10, all 25 respondents who reported being either satisfied or very satisfied with their employers' overall support also reported that their employers have been as supportive, somewhat more supportive, or much more supportive than expected. Conversely, all 6 respondents who reporting being dissatisfied or very dissatisfied with their employers' support also reported their employers had been as supportive, somewhat less supportive, or much less supportive than expected.

Question 3.13: "Feel free to explain the rating for your expectations of your employer's support"

- Among the 40 respondents, 12 of them wrote comments to explain their comparisons between expected and actual support from employers.

The main themes among the comments are the following:

- *Low expectations, low results*: 8 respondents explicitly or implicitly mentioned that they expected (i.e., predicted) low-quality and/or low-quantity support from their employers; these employers have not been accommodating or considerate of the situation
- *Doing the basics*: 4 respondents mentioned that their employers allowed or provided the essentials for working from home, ranging from providing equipment to simply allowing remote work
- *Very supportive employers*: 2 respondents noted that their employers have exceeded expectations and show caring about their wellness

METHOD 2: SEMI-STRUCTURED INTERVIEW

Another method was conducting interviews. The purpose of the semi-structured interview was to analyze employees' experiences (behaviours and attitudes) transitioning from office to home. Refer to Appendix IV for the complete interview script.

Procedure

Traditionally, interviews would have been conducted in-person, but due to the current lockdown situation, they were conducted virtually over Zoom. The semi-structured interview took 30 minutes to complete. Participants (Figure 29) were required to reply to the recruiting emails to consent before the scheduled interviews. Breaks were not scheduled into the interviews due to the short duration of the sessions; however, interviewees were advised to ask for a break if they needed one.

Each interview consisted of a semi-structured set of 17 questions with sections for introductions (warm-up), productivity, work environments, employer support, and conclusions (cool-down). Four additional questions were created in case the conversation stalled.

Participants

Participant ID	Description of Occupation
P1	Software Engineer
P2	Research Analyst, mental-health hospital
P3	Product Manager, financial software company
P4	Regional VP, financial investment company
P5	Digital Marketing Professional

P6	Product Manager, investment bank
P7	Administrative Professional, Project Coordinator
P8	Financial Accountant
P9	Event Management, CRM & project officer
P10	Game Tester, Quality Control

Figure 29. Table describing interview participants.

Results

The interview has three main sections: productivity, work environment and employer support. Interview results were analyzed with a notetaking guide (Appendix V), coding, and axial coding.

Part 1: Productivity

Theme 1.1: Perception of productivity changes

There was an interesting division on people's subjective evaluations on their productivity changes when working from home. Of the 10 participants, four (P1, P7, P8, P10) felt more productive at home compared to at office. One of them explained the increased productivity:

"It's actually I become more productive. Like there's less distraction at home." - P7

For many participants, there was pressure to "perform" at the office and always look like they are working. At home, the pressure was off, and they finished the deliverables more efficiently. One participant disliked the supervision in the office as it was stressing and wasted time:

"I don't like to be watched when I'm working but my manager is sitting closely to me and I felt stressed, so I remained on my seat even after finishing my work just to impress my manager. But that was time-wasting and not efficient." - P8

Three participants (P2, P3, P5) reported the same level of productivity. Specifically, one interviewee pointed out that more efforts were paid to complete the same amounts of work online as it was time-consuming to ask for and receive the guidance or direction. Meanwhile, the rest of interviewees brought up the challenges of remaining productive at home. A participant believed that the lack of supervision contributed to lower productivity:

"Actually, and I think without someone watching you, people are starting to slow down and their efficiency rates." - P4

Theme 1.2: Factors impacting productivity

While talking about the factors that increase the productivity at home, 3 participants commented that payments drive their productivity. One interviewee mentioned:

"my motivation has always been my pay." - P5

Moreover, good communication was another common factor that contributed to the change in productivity. Good team communication helped interviewees to collaborate efficiently and stay productive in the virtual setting. One participant (P9) was satisfied with the online communication that had been done through emails and weekly meetings on MS Teams. The communication system was prevalent from the eye of the participant.

However, when we tried to understand the key factors contributing to the reduced productivity, the most frequent responses (10 out of 10) pointed to the poor communications across departments and the lack of synchronous communication. Three participants mentioned that interdepartmental communication with teams that they had only spoken to informally at the office in passing decreased significantly due to the smaller sphere of communication. One of them explained:

"There's less camaraderie and less interaction between the departments at the office." - P10

Another participant elaborated the frustrating experience on communicating with the sales teams:

"We use email to communicate with the sales team but the communication has been reduced. And email communication slows down our working process as it takes longer to reply an email." - P8

Also, the lack of synchronous communication hinders the productivity. The remote working made it more challenging for P3 to reach out:

"I think one of the biggest things that I'm sort of finding is that those conversations that you would usually have in [the] office, impromptu or ad hoc meetings are a little bit, I guess, less likely to happen." - P3

In terms of the group communication, coordinating the meeting time was also frustrating and made the group communication more difficult because differing schedules.

Many participants thus indicated preference for in-person communication. P2 embraced the personal meeting as it was easier to reach out:

"So I find that when you're in person, being able to kind of see the person in front of you is a bit easier

to ... like you're, a bit more inclined to try and ask for help. But when you're virtual, you don't really know what they're up to.”

Part 2: Work Environment

Theme 2.1: Work environment

Since the start of the COVID-19 pandemic, most office workers had an unexpected transition in their work environment. In our study, we focused on the pain points of office workers in their transition from on-site working to working from home – discussing not only their feelings about the transition, but also their attitude towards a more comfortable working environment. Moreover, we noticed that there exist some changes in work-life balance after shifting to working from home. Hereby, we want to summarize our work environment data into two categories: physical environment and work-life balance.

Theme 2.2: Physical environment

After shifting from working on-site to a home office, a lot of people have found it uncomfortable or inconvenient to work at home in terms of the device setup, internet connection problems, as well as distractions that they will experience when working from home. A few participants mentioned that there are no changes to their home after shifting to remote working. On the other hand, according to our interview data, we noticed that 8 out of 10 participants (80%) have mentioned a change in their desk setup since their home has become their working space. In order to make their home more closely resemble their on-site workplace, a few of them upgraded their equipment at home, such as a better chair for sitting in while working, an additional monitor, or they even have to work in a quiet room for having calls and meetings because some of them do not live alone.

“I sort of go between two different rooms, because I live with somebody else who also is working from home.” - P8

In addition, 4 out of 10 of our participants mentioned that sometimes there are issues with Internet connections; another 4 out of 10 participants (or 40%) talked about needing to use virtual private networks (VPNs) for some company data, and the VPN connection was also causing problems when working from home. Issues like these ones have delayed their working progress as well as decreased perceived productivity when working from home.

“...every once in a while, there are internet problems. The VPN network doesn't always work that well...when it doesn't, then you're stuck because you can't do anything.” - P6

Theme 2.3: Work-life balance

Other than the changes happening at home to accommodate a remote working environment, we have also noticed that there are changes to lifestyles or imbalances between personal lives and work lives among our participants. In terms of their physical health, after starting to work from home, 7 out of 10 participants (70%) reported themselves as doing less physical exercise, while 3 of them thought there was no impact to their daily physical exercise routine. While one participant thought the lack of commuting has actually improved their work-life balance, 2 participants thought they are doing fewer physical exercises due to lack of commuting to work.

“I feel like I work out less, much less... I used to walk at least five minutes to the bus station...but now I have nothing. I kind of enjoy [my] commute.”
- P5

Among the participants, after working remotely started, there were different opinions towards their eating habits at home. In our study, 6 out of 10 participants (or 60%) mentioned that their eating habits remain unchanged or even got better after working from home. Some of them are living with family and, thus, spend more time eating with their family. Others eat healthier because they have more time to eat and cook at home, so they eat less junk food or fast food.

“I eat less junk food. I'm more willing to actually cook something for lunch...The other day I cooked some beef and made some pasta for lunch. But I would have never done that otherwise.” - P10

On the other hand, one participant thought that due to the absence of fixed break-times and remote working, they have less time for preparing food and they had to stare at their screen while eating in case their colleagues have messaged them.

“...but now, you know, I have to eat it quick. I don't have time to prepare, I usually have instant noodle at lunch.” - P5

Additionally, we found that half of our participants found that working from home actually improved their mental states or they exhibit a better mood working from home due to the change of the environment. Common reasons for that included having more personal time, a quieter working space, as well as feeling more productive, spending more time with their family, and having someone to talk to at home. On the other hand, 4 out of 10 participants mentioned that they are sadder staying at home for not only feeling insecurity about their job but also about the current COVID-19 situation. Some also said they felt mentally drained from being indoors all the time:

“Definitely sadder, less motivated.” - P9

By contrast, one participant has the opposite feeling:

“...I am being more productive at home and my mental health is definitely, you know, I’ve noticed an improvement. I feel like my mood is good and I enjoy the work that I do.” - P8

Part 3: Employer Support

Theme 3.1: Employer Support Received

When asked about what sort of support received by their employers, participants varied in their responses: for technical support, 4 participants mentioned that their employers either provided them with equipment, upgraded software to WFH, or reimbursed them if they bought their own equipment. Others, however, have not received (or no longer receive) employer support. For example, P9 mentioned that for the first half of the period of WFH, the company paid half of the phone bills for their employees, then stopped. One participant (P8) mentioned reaching out to the IT department for technical support, but “no one responded.” P5 reported delay in bonus pay. On one hand, 4 participants expect more support in terms of equipment/troubleshooting, while on the other hand their employers expect them to work as-is.

For directional support, P1 mentioned that their boss is always there to help whenever they faced a problem:

"I talk to my manager every day and he just like checks up on me make sure I have everything I need to work appropriately. If there's something I need, things like that."

Theme 3.2: Changes to Employer Expectations

Working from home has changed how things are done for everyone. Some employers set new policies, expectations and/or responsibilities, others expected the performance to maintain just like working at the office, while a few employers lowered their expectations. Two participants reported that their employers’ expectations are reasonable, and 4 are actually satisfied. In contrast, 2 participants reported being dissatisfied with their employers' expectations. Three participants mentioned that their employers expect comfort with ambiguity, change, and uncertainty, whereas these participants feel that more information is needed.

Some employers had doubts transitioning to WFH, while others expected everyone to transition smoothly to WFH. A couple of participants mentioned that their managers left the

employees to coordinate and communicate among themselves.

Work schedules (working hours) remained the same for 3 participants. Employers generally offered flexible working hours, and that was especially useful for employees with children at home.

"They've been very supportive of employees who have employees who have young children [...] and most of them were very flexible in terms of "okay if you can't work. Let's say from 9-2 as you normally would [...] then you do the rest of the evening". That was fine, too. I mean, there was a lot of flexibility." - P6

One participant brought up a different challenge: they reported feeling pressured with the increased responsibilities due to reduction in manpower and no monetary compensation.

Managers need to clearly communicate expectations for employee responsibilities, communication amongst the team and with other departments, and working hours. Managers should also keep employees in the loop, especially in terms of when to expect to return to office.

ANALYSIS AND DISCUSSION

Productivity

Our first research goal was to assess how employees' feelings of productivity have changed since transitioning to remote working and what factors affect employee productivity at home. The research questions related to productivity that we addressed in our study are:

1. Perceptions of Productivity: How productive do office workers feel when working at home relative to at the office?

Our survey revealed that more than half of the office workers (27 out of 40, or 68%) felt that they were spending more time working at home than when they were at the office. Furthermore, a little over half of the survey participants (21 out of 40, or 53%) indicated that they felt their workload also increased. In general, office workers are working longer hours at home and this might be the result of having more work to do.

When asked to assess their personal feelings of productivity at home relative to the office, 10 survey respondents (26%) felt that they were less productive, 12 (30%) felt they maintained the same level of productivity and 18 (45%) felt more productive at home than at the office. The Likert scale survey question "I feel more productive than when working

at home than at the office" produced central tendency measures that situated in the neutral responses (median response of "Neither Agree or Disagree" and a mode of "Neither Agree or Disagree"). The same question was asked in the interview and the spread was similar to the survey: 3 out of 10 participants felt less productive, 3 felt the same level of productivity and 4 felt more productive. From this data, we were able to identify that shifting to working from home had a wide range of effects on people. The variance in results indicates that there are factors at home that can improve or deteriorate productivity.

2. *Factors Impacting Productivity: What factors have affected their productivity at home, if any?*

The survey and interview revealed that the major factors negatively impacting productivity at home include work communication issues, mental health, distractions in the physical environment, and technological barriers. These are the factors that might explain why people feel like they are working longer hours and are less productive at home.

Work communication, although in some cases improved with direct teams, are much weaker interdepartmentally. Of the 40 respondents, 22 (55%) survey respondents indicated in Question 1.7 that poor work communication was a factor impacting productivity at home; examples from the survey include lack of direction and poor co-worker connection. One interviewee elaborated:

"We use email to communicate with the sales team, but the communication has been reduced. And email communication slows down our working process as it takes longer to reply an email."

This quote summarizes well the communication struggles of 3 interview participants. Generally, office workers interact with other departments at the office by conversations sparked by physical proximity. Furthermore, with the blending of personal and work schedules together, interviewees indicated that scheduling meetings has become more challenging while working from home. They found that communication was more effective at the office because they could just walk over to a person's cubicle to ask questions without waiting for their next availability online.

Mental health also played a role in reducing productivity at home. Among survey respondents, 22 out of 40 (55%) indicated in Question 1.7 that mental health was a factor negatively impacting productivity while working remotely; examples from the survey included depression, anxiety and COVID-19 relayed fears. 4 out of 10 interview participants mentioned that their mental health declined; the reasons uncovered from the interviews include feeling drained from being indoors all the time and feeling job uncertainty due to COVID-19.

Interestingly, their physical environment impacted their productivity both in negative and positive ways. For Question 1.7, 18 out of 40 (45%) survey respondents indicated that their physical environment impacted their productivity at home negatively; examples provided from the survey include distractions, lack of windows, air quality and temperature. Four out of 10 interviewees indicated that they were more distracted at home due to the lack of supervision, resulting in increased negative influence of distractions at home over productivity. Common distractions uncovered from the interview included family members, checking social media on their phone, Netflix, and even napping on their bed. Conversely, other respondents thought there were less distractions at home than at the office. They used to get sidetracked and overstimulated by their busier social environment at the office; at home, they are familiar with the space and feel less distracted.

Technology was another WFH productivity barrier that some had indicated. For Question 1.7, 17 out of 40 (43%) survey respondents indicated that technology was a factor impacting their productivity at home; examples of technology as a barrier provided from the survey include no additional monitor, keyboard, or mouse as well as poor Internet connection. Some common challenges included not receiving adequate training for Microsoft Teams, getting their remote office software (e.g, VPN) running properly and poor Internet connection at home.

On the other hand, as indicated previously, some office workers actually felt more productive at home. Our research uncovered that factors improving productivity at home include, as noted previously for some, there are fewer distractions at home than the office, cutting out commute time from the day, and improved mental health from decreased stress related to managerial monitoring.

Two out of 10 interview participants felt more productive because they no longer have to spend several hours every day commuting into work. The time that was spent commuting is now being more effectively used to get enough sleep and start work earlier. However, notably, one interview participant actually misses commuting because it was their primary form of physical activity every day.

Although a negative factor for some, as noted previously, mental health actually played a role in improving productivity for others. Five out of 10 (50%) interview respondents indicated that working from home improved their mental health, directly related to the change of their environment. A quote from P8 illustrates the effect of improved mental health on productivity:

"I am being more productive at home and my mental health is definitely, you know, I've noticed an improvement. I feel like my mood is good and I enjoy the work that I do."

Common reasons uncovered from our interviews for increased happiness at home include the increased flexibility in their daily scheduling, more personal time, and a quieter working space. In addition, at the office they felt that being closely monitored by supervisors actually decreased productivity because it led to more stress and made them feel like they had to be more performative at work (i.e., look like they are working as opposed to actually working). Our survey results also further support this insight as 29 out of 40 (73%) respondents felt that perceptions of productivity were valued by their employers.

Design Solutions to Improve Work from Home Productivity

With decreased supervision at home, our research indicated that people had a tendency for increased distractions and less self-discipline. A common distraction for many of the interview participants was their phone, specifically getting distracted by browsing social media. A design solution could be a phone add-on or application that can reduce recreational phone use during work hours. For example, if someone needed to concentrate on work for the next hour, an app that turned off recreational notifications or locked the social media app until a set time, could help with improving self-discipline and reducing distractions. It would be like a cookie jar with a timer - the reward for working through the hour could be a short break on social media.

Another factor that negatively impacted productivity at home was the decrease in interdepartmental communication. Our research uncovered that interdepartmental communication often happened at the office due to physical proximity to other teams and that many people missed the informal social interactions at the office. A design solution that could bring people from different teams together again could be a "water-cooler" app; the idea is that when people take breaks at home, they can go to the virtual water-cooler space to talk and socialize with other co-workers that are also on break. Another solution could be like a virtual lunchroom to have lunch with co-workers. This app would be particularly good for people who live alone and do not have anyone to have lunch with; by decreasing loneliness during times of isolation, we can also improve mental health, which will in turn improve productivity.

Work Environment

The purpose of our second research goal was to assess if office workers felt like working from home has impacted their productivity. We also aimed to uncover what factors affect their productivity at home and assess how their productivity has changed since transitioning to working from home.

After interviewing people who work in different fields, we noticed that there have been significant changes – both in

terms of their working environment and the balance between personal life and work life. The research questions that we have investigated are:

3. Physical environment: How have office workers modified their physical space at home to accommodate for remote working, if at all?

Through our interview, we found that participants whose jobs require special equipment found a bigger shift from working on-site to working from home. Some unexpected technical issues could also cause delays as well as feeling less productive when working from home. For some workers, the physical environment was not just about the physical things present in their environment, but rather what is not there; some workers needed absolute silence for company calls and meetings that had sensitive company data. The ones who required a VPN to finish their tasks faced trouble when working from home. "There were some problems like you couldn't access some websites because you weren't on the secure network at work. So you had to go through VPN, and I can slow things down," P1 mentioned. Moreover, for participants who work in certain fields that require special equipment, remote working has brought big changes to their working environment at home.

Similarly, our survey data supported these claims and showed that 26 of 40 respondents (66%) had made changes to their home environments. Of those who reported making changes, 14 also stated that they are capable of separating their personal and professional lives while 12 stated the opposite. On the other hand, for those who have not made changes (14 of 40 respondents), only 2 respondents (14%) reported feeling that they are not able of separating their personal and professional lives. This suggests that while the majority of respondents have made modifications to their home environments to accommodate for remote working, the effects on their sense of work-life balance and workers' ability to separate their personal and professional lives is not substantially affected by these modifications.

4. Work-life balance: How has bringing the office into the home affected workers' work-life balance and daily routines (i.e., eating habits, physical activity, hobbies, work-life balance, etc.), if at all?

Participants' eating habits have changed mostly in their work-from-home life. The current pandemic situation has limited most people from going out and interacting with others in and around their workplace, which is a potential cause for mental health issues. Other than that, the lack of physical exercise was another noticeable issue for remote working, because for some participants, walking as their commute was their only workout opportunity when they still worked on-site. P10 reported:

"Physically, I feel like I'm definitely not getting as much exercise as I used to, even just the walk to work."

Nonetheless, some workers mentioned that they are actually feeling more productive when working from home since there are less distractions from their workplace and colleagues and so they are in a better mood working from home. Some participants thought they are more flexible with their personal time and get to arrange their workout routine better. For instance, P8 said, "In general, I have more personal time and I am more energetic."

Some participants reported that they are eating healthier and are more flexible or have more time to eat during the day. For those participants, they welcomed this change as it has brought them a better daily routine. It has improved their life quality in the sense of living a healthier life while being less busy with work. P3 said:

"...but now we're actually forced to make more food from home. So, it's been a lot healthier, I guess..."

However, the others felt that the lack of a traditional lunch break time has promoted worse eating habits since working from home. Due to the non-fixed/non-existing break time in their work from home schedule, they found it harder to maintain a healthy life; they have less time to prepare food and the only options left to them are mostly unhealthy choices. This situation was demonstrated by P5's quote:

"I have to eat it quick. I don't have time to prepare, I usually have instant noodle at lunch."

One of the things that surprised us was that people in engineering backgrounds or working in a related field felt more comfortable and flexible when working from home. Perhaps one explanation for that could be the relatively flexible nature of the job, which provides an environment wherein employees can work anywhere they prefer.

Moreover, our quantitative findings showed that the majority of participants (discounting those that felt neutral) expressed feeling their work-life balance has not been affected in any way by bringing the office into the home (20 of 35 participants). For those who mentioned otherwise, the most common reported changes included adjustments to sleep schedule (13 mentions), increase in level of exercise (7 mentions), and less time spent commuting (6 mentions). This supports our qualitative findings, which suggest that while changes to daily routines are common among respondents, they have had little to no effect on their sense of work-life balance. Rather, they have affected other aspects such as their eating habits, physical activity, and sleep schedules.

Design Solutions for Work Environment

In conclusion, we decided to focus on a design solution for existing problems relating to home working environments. First, having fixed break-times, even for remote working just like working on-site, could avoid situations in which employees have to remain in their workspace even when they are eating lunch. Second, we considered providing a solution for employers to increase company connections by having more virtual events, as well as encouraging employees to take part in more physical activities. Lastly, we believed that by incorporating a task scheduling feature into our solution that allows employees to separate between personal and work-related tasks, employees will be more able to finish their work-tasks on time while also maintaining a healthy separation between their personal and professional lives.

Employer Support

Another research goal was to explore employer support in terms of types provided, work expectations, and workers' attitudes of employer support.

5. Support Received: In what ways have employers supported office workers in their new working environments (e.g., technical, financial, career, wellness, direction, etc.)?

The most commonly—though not universally—reported types of employer support were technical support and directional support. The former involves facilitating access to and knowledge of computer hardware and/or software; the latter involves communicating work-related expectations, timelines, and updates. We had expected these types of support because they enable office workers to do their work, and employers provide them in normal periods anyway. Moreover, technical support and directional support are indirectly beneficial to employers as well as directly beneficial to workers. However, only about half of survey respondents reported getting each type of support (24 of 40 and 19 of 40, respectively). Technical support and directional support were major themes among the comments of survey respondents and among the 10 interviewees.

Though less common, more personalized and/or private types of employer support were reported. Wellness-, financial-, and career-related support were reported in non-trivial numbers by survey respondents (16 of 40, 12 of 40, and 9 of 40, respectively). Wellness support could involve gatherings, resources, and rest; financial support could involve reimbursements and stipends; and career support could involve mentorship and networking. These types of support are less obviously beneficial to employers because they often result in shorter-term losses of financial resources and worker productivity. Nonetheless, a notable minority of employers within this sample have been willing and able to

provide some worker-centric support, despite this unprecedented period of hardship.

Four of 40 survey respondents reported that they have not received support from their employers. Two interviewees reported that employer support has either been discontinued (e.g. financial support) or nonexistent (e.g. technical support). Because this study had not asked participants to describe their definitions and standards of support, they might have received support and not perceived it as such. Also, this study has assumed that participants need and/or want employer support, but some people might be satisfied with little to no employer support.

The need to consider individual preferences and situations was highlighted by the survey results regarding whether working from home is more challenging than working on-site. Somewhat surprisingly, the 40 respondents are almost evenly divided along this issue. That is, 18 respondents either agreed or strongly agreed with the notion that working from home is more challenging; 16 either disagreed or strongly disagreed with this notion. Moreover, respondents' answers to this survey question had a fairly uniform distribution across the five possible answers. The lack of a consensus among survey respondents showed that working from home is not universally viewed as being more (or less) challenging. Because difficulty with working from home apparently varies from person to person, so too would their needs for employer support in terms of type and significance.

6. *Employer Expectations: How have employers changed work expectations to match the added difficulties faced by the worker during the pandemic?*

Among survey respondents, the only prominent change regarding work expectations is the prevalence of overtime work, which is mostly regular and unpaid. One respondent wrote:

"Everyone seems to be working overtime too, so no compensation is considered."

Exactly 80% of survey respondents (32 of 40) reporting working overtime once per month (7), once per week (9), or multiple times per week (16). Among the 35 respondents who reported doing at least some overtime work, only one reported being paid for it, even though 24 of the remaining 34 reported, implicitly or explicitly, that their employers are aware of their overtime work. However, 12 respondents reported being compensated with extra time-off for future use; whether that time-off is paid is not known. These respondents and their employers were apparently expecting, or at least hoping for, a return to normalcy in the near future.

Employers expecting office workers to do overtime work is not unusual, but employers expecting office workers to do so

without pay is unusual. This changed expectation does not match (i.e., compensate for) the added difficulties of this pandemic; if anything, it amplifies the added difficulties. The survey has not explicitly asked respondents about how, or even if, their employers have changed work expectations to accommodate this trying period. On the other hand, the survey has explicitly asked respondents to evaluate the extent to which their employers' current work expectations are reasonable. We believed that such a question is ultimately more meaningful.

About two-thirds of survey respondents (26 of 40) either agreed (20) or strongly agreed (6) with the notion that their employers have reasonable work expectations amid this pandemic. We are assuming that these particular employers have made at least some changes to work expectations, whether they involve productivity and/or practices, but we do not have a lot of information about such changes themselves.

Interestingly, one-tenth of survey respondents (4 of 40) either disagreed (2) or strongly disagreed (2) with the notion that their employers have reasonable work expectations amid this pandemic; the other 10 respondents had neutral views. The fact that only 4 survey respondents seemed to view their employers' work expectations as being unreasonable, despite the prevalence of regular and unpaid overtime work, suggests that office workers in general might have changed (i.e., lowered) their standards for whatever constitutes reasonable work expectations from their employers.

As for interviewees, 7 reported that their employers' work expectations in terms of productivity are essentially the same (6) or lower (1). One interviewee, however, described significant changes in their employers' work expectations; these changes were related to a sizeable number of layoffs that resulted from the pandemic as well as the seasonal nature of their industry. Another interviewee noted that their employer now required a weekly summary of their daily activities. Still another interviewee stated a belief that their employer had changed work expectations yet did not communicate them.

In general, employers have not made dramatic changes to their work expectations with the intent of making life easier for their workers. However, study participants have, for the most part, adapted to current work expectations.

7. *Employee Expectations: How do employees feel about the support that employers are providing them during the pandemic to support remote working?*

Examining the survey, respondents have very high within-subject consistency in terms of their views about the clarity of their employers' timelines, the presence of their employers' support, and satisfaction with that support. These

aspects are examined in Questions 3.8, 3.9, and 3.10, respectively. (The latter is not written as a Likert scale, but its answers are comparable if "Very satisfied" is assumed to be the same as "Strongly agree," and so on.) The distribution of respondents' answers is nearly identical across the three questions. Overall, 23-25 expressed positive views, 6-7 expressed neutral views, and 8-11 expressed negative views. Respondents' evaluations of their employers' overall support, including directional support, seems to reflect their broader views of their employers; communicating clear timelines and making support both noticeable and satisfactory are products employers' management, leadership, and culture style.

For survey respondents, employers meeting expectations of support does not guarantee satisfaction with support. If expectations of support are interpreted as *predictions* of support, then the results are more intuitive to understand. All satisfied and very satisfied respondents reported that their employers have *at least* met expectations (predictions); all dissatisfied and very dissatisfied respondents reported that their employers have *at most* met their expectations (predictions). Those who were neutral about their employers' support collectively reported a range of (mis)matches between expected (predicted) support and actual support.

Interestingly, survey respondents collectively reported more satisfaction with their employers' support for mental health compared to support for physical health. Regarding the notion that their employers provide satisfactory mental health support, 21 of 40 respondents agreed or strongly agreed; regarding the similar notion for physical health support, 11 of 40 respondents agreed or strongly agreed. Moreover, about twice as many respondents were neutral about their satisfaction with the latter (11) compared to the former (5). Employers might be emphasizing support for mental health and/or neglecting support for physical health because the former tends to require more individualized and specialized or professional care. Additionally, or alternatively, workers might have different standards for supporting these two aspects of personal health.

For interviewees, all of them expressed overall neutral or positive views about their employers' support. However, only 2 interviewees seemed to be totally satisfied in the sense that they could not offer any suggestions for improvement.

Design Solutions for Employer Support

Any experience-related design solutions that facilitate employers' support for remote workers should suit the particular demands of technical support and directional support. Technical support often involves urgency and wide ranges of factors (e.g., software versions, Internet speeds, knowledge levels). Thus, solutions for technical support should be usable in time-sensitive situations and with a variety of technical setups. Directional support can involve

information that changes with unpredictable frequency, and it can be multi-layered. Thus, solutions for directional support should always be available as well as prominent, organized, and customizable.

Above all else, design solutions should be individualized. The majority of interviewees (8 of 10) expressed a preference for working from home, but they and the survey respondents collectively did not have any overwhelming agreement about any aspect of employer support. Design solutions should input individual attributes, such as needs and wants, to determine the type and extent of employer support that is provided. Design solutions might need to involve multiple facets, such as technical support and personal wellness. The willingness and ability of employers to provide that support are limiting factors, so they should be incorporated.

CONCLUSION

Firstly, more than half of survey respondents felt they spent more time working at home than working in office. According to the survey, 71% of people felt a change in productivity after remote working, and similar pattern is found in interview data. The factors that affect their productivity at home are work communication issues, distractions in physical environment, and technological barriers. Secondly, in terms of the work environment, the survey results have revealed that about two thirds have made changes to their work environment at home. Similarly, 80% of interview participants mentioned they made changes at home for their work. Although the survey shows that the majority of people think working at home has not disrupted their work-life balance, 70% of the interview participants described themselves as doing less physical exercise. Meanwhile, most participants think their eating habits remain unchanged or even got better after remote working. Lastly, the most commonly reported types of support seen in survey data are technical support, e.g., computer hardware and/or software, and directional support such as work-related expectations, timelines, and updates. Moreover, the majority (80%) of participants in the survey mentioned that they are working overtime, yet most of them are not compensated, even though employers are aware of their overtime work. The (dis)satisfaction that employees exhibit with the support from their employer seems to correlate with what their expectations towards their employers were: participants tended to report satisfaction if the minimum of their expectations was met or exceeded. On the other hand, dissatisfaction was reported when employers did not exceed/go beyond participants' expectations/predictions of support. Finally, satisfaction with mental health support was expressed twice as often as satisfaction with support for physical health.

LESSONS, LIMITATIONS, AND FUTURE WORK

Lessons

Through this study, we learned how to conduct research ethically with proper consent forms. All research methods have been conducted ethically. We strictly followed the informed consent principles. We informed the participants about the goals of the study and the detailed procedure of the research. Before the interview, we informed them on their right to withdraw the study at any point of time without penalty. The study protocol was sending to the interview participants to obtain the written consents over emails. We also took the verbal consent of the participants before starting the interviews.

We treated the participants with respect and stressed the fact that the research tool in question was being tested and not them. We were aware and avoided any potential risks that may affect the participants physically and mentally.

For the data collection process, we ensured that the data collected was accurate and valid. Also, we provided pseudonyms for the participants to keep them anonymous.

Limitations

Out-of-context interview and surveys were insufficient. Both of the research tools failed to verify the behavioural data collected from the participants, especially for the questions regarding the working environment. Moreover, there were several limitations of conducting interviews online:

- Difficult to establish a rapport and level of trust between researcher and participant in an Internet-based context
- Difficult to capture messages other than verbal language due to the lack of eye contacts

In the case, we will conduct more research with other observation methods to capture the participant's behaviour at their current working environment if the resource permits. Observing employees at the site where they are working will help us better understand the context of their actions.

Future Work

For the next step, we will refine our current potential solutions proposed into a coherent design that solves the following problems:

- increased distractions and less self-discipline
- decreased interdepartmental communication
- worse eating habits
- insufficient technical and directional support

REFERENCES

- Allen, T. D., Golden, T. D., & Shockley, K. M. (2015). How effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest*, 16(2), 40–68. <https://journals.sagepub.com/doi/10.1177/1529100615593273#articleShareContainer>
- Bell, J. (2020, June 19). Remote working is the new norm—work-life balance is more important than ever. *Big Think*. <https://bigthink.com/personal-growth/remote-work-life-balance>
- Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2014). Does working from home work? Evidence from a Chinese experiment. *The Quarterly Journal of Economics*, 130(1), 165–218. <https://nbloom.people.stanford.edu/sites/g/files/sbiybj4746/f/wfh.pdf>
- Chew, W. B. (1988, January). No-nonsense guide to measuring productivity. *Harvard Business Review*. <https://hbr.org/1988/01/no-nonsense-guide-to-measuring-productivity>
- E.Y. Belgium. (2020, September 7). Why remote working will be the new normal, even after COVID-19. *Ernst & Young*. https://www.ey.com/en_be/covid-19/why-remote-working-will-be-the-new-normal-even-after-covid-19
- Harter, J. (2020, April 7). How leaders are responding to COVID-19 workplace disruption. *Gallup*. <https://www.gallup.com/workplace/307622/leaders-responding-covid-workplace-disruption.aspx>
- Kohll, A. (2020, April 6). How one company is taking care of employees during COVID-19. *Forbes*. <https://www.forbes.com/sites/alankohll/2020/04/06/how-one-company-is-taking-care-of-employees-during-covid-19/#1c32abd9488d>
- Ladika, S. (2020, April 2). These companies put employees first during pandemic. *SHRM*. <https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/these-companies-put-employees-first-during-pandemic.aspx>
- MacLeod, M. (2020, June 15). Is the great shift to working from home here to stay? *CTV News*. <https://www.ctvnews.ca/health/coronavirus/is-the-great-shift-to-working-from-home-here-to-stay-1.4981456>
- Matos, K., & Galinsky, E. (2015). Commentary on how effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest*, 16(2), 38–39. <https://doi.org/10.1177/1529100615604666>
- National Partnership for Women & Families & National Employment Law Project. (2020, May 21). Employer best practices policies to support workers during the Coronavirus pandemic. *National Partnership for Women & Families*. <https://www.nationalpartnership.org/our-work/resources/economic-justice/employer-best-practices-support-workers-during-coronavirus.pdf>
- The Canadian Press, & Deschamps, T. (2020, June 22). Canadians working from home permanently should expect salary changes: experts. *CTV News*. <https://www.ctvnews.ca/business/canadians-working-from-home-permanently-should-expect-salary-changes-experts-1.4993449>

APPENDIX I: RECRUITMENT MATERIALS

A. Recruitment Email 1 – Interview Request

Hi (Name of Email Recipient),

We're conducting a user research study to understand the impact of the transition to working from home as well as employer support during the COVID-19 pandemic. Participating is a way to safely express your views about this topic.

We're graduate students in the Faculty of Information at the University of Toronto. This study is coursework for INF2169: User-Centered Information Systems Development, which is taught by Velian Pandeliev.

We're inviting you to participate in our study by joining us for a 30-minute, Zoom interview.

We're looking for:

- a full-time office worker who worked on-site (at least 4 days per week, or 35 hours per week) prior to the pandemic
- has transitioned to working from home (at least 4 days per week or 35 hours per week), and
- currently continues to work in this way

*Please note that participants who were working remotely prior to the pandemic are not eligible for this study.

We're interested to know about your transition to working from home after the COVID-19 pandemic started. Please note that the interview session will be recorded only with your permission.

If you qualify and are interested in participating, please reply to this email by [date].

Best regards,

Pod 11 Team

B. Recruitment Email 2 – Survey Request

Hi (Name of Email Recipient),

We're currently conducting user research on understanding employer support in a remote working context. Participating is a way to safely express your views about this topic.

We're six graduate students in the Faculty of Information at the University of Toronto. We're looking for full time office workers who worked on-site (at least 4 days per week) prior to the pandemic and have transitioned to working from home (at least 4 days per week) indefinitely due to the pandemic. Please note that participants who were working remotely prior to the pandemic are not eligible for this study.

This study is conducted for an assignment in the class INF2169 User-Centered Information Systems Design. We would love to have your valuable insights on how employers actually help you work from home. Please complete this 10-minute survey [link] to help us get your answers. Thank you for your time and interest!

Best regards,

Pod 11 Team

C. Recruitment Social Media Post

If you worked full-time in an office prior to the COVID-19 pandemic and now work remotely (at least 4 days per week), you have a chance to participate in a University of Toronto research study! Participating is a way to safely express your views about this topic. We're looking to understand how working from home, compared to working from an office, has impacted you. All you need to do is complete a 10-minute survey: (Link to Survey). Thanks!

D. Recruitment Flyer/Poster



Pod 11 Team

WFH During COVID-19

Research Study

What is our goal?

Understand how office workers are ensuring work-life balance during COVID-19 to help them better manage their time.

Who are we?

We are a group of MI students from the University of Toronto and we are recruiting participants for our research study.

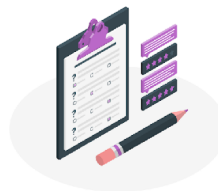
Who should apply?

- ✓ Full-time employee working from home.
- ✓ Working from home because of COVID-19.
- ✓ Working from home at least 4 out of 5 workdays per week.

The process



3 screener questions to evaluate if you would be a good candidate for our research study



30 question survey about your experience working from home during the pandemic



30 min interview to give you the opportunity to elaborate on your survey responses

For more information about this research study, please contact:
Fabian de la Fuente at f.delafuente@mail.utoronto.ca

APPENDIX II: INFORMED CONSENT TEMPLATE

A. Survey Consent Form

This study is part of a research exercise conducted by six students from Prof. Velian Pandeliev's INF2169 (User-Centred Information Systems Development) class in the Faculty of Information. The six students are the following:

Reem A

Debbie C

Fabian F

Tim Huynh

Winnie L

Xinyi Y

If you have any questions or concerns about this study, please contact Prof. Pandeliev at [email address removed].

Purpose

The purpose of this study is to assess how office workers are affected by the abrupt transition to working from home as a result of the pandemic and how employers are supporting employees in their new work environments. This study will identify pain points that office workers experience while working at home and areas of improvement if there are any gaps between employer support and employee expectations.

Procedure

Participants will complete an anonymous, web-based questionnaire. It involves attitudinal and multiple-answer questions as well as some short-answer questions. Participants will rate the importance of certain work-related ideals and their employers' meeting of these ideals. Participants will also identify aspects of their current working conditions. All questions have a null or non-answer option.

Right to withdraw

Participation is voluntary and participants can withdraw at any part of the study without penalty. Information collected will be removed from the results upon request. Please contact any member of the research team if you wish to withdraw your data from the study.

Permission to record, data privacy, and confidentiality

All submissions are anonymous, and data will only be accessible to the six named members of our group. Information that might identify participants will be anonymized if voluntarily provided and excluded if automatically detected. Our group will report anonymous and general findings to the lecturer and teaching assistant of this course. Data (aside from general findings) will be destroyed after grades are finalized for the INF2169 course [within three months].

Informed consent

As an adult aged 18 years or older, I hereby consent to participate in a study conducted by Pod 11 Team for INF2169, for the purpose of exploring working conditions and employer support of work-from-home workers. I understand that:

- The procedures to be used are an anonymous, web-based survey.
- Instead of monetary compensation, I get to participate in research, express issues and contribute to this study.
- I may express concerns, ask to pause, skip an activity, or withdraw at any time without explanation or penalty.
- My data will only be shared among the six named members of the group.
- My data will be kept confidential and my identity or any identifying information will not be associated with it.
- My data will be part of general findings that are reported to the course lecturer and teaching assistant.

This activity constitutes reflective and professional practice and is exempt from Research Ethics Board (REB) Review per <https://research.utoronto.ca/ethics-human-research/activities-exempt-human-ethics-review>

B. Interview Consent Form

This study is part of a research exercise conducted by six students from Prof. Velian Pandeliev's INF2169 (User-Centred Information Systems Development) class for the Faculty of Information. The six students (henceforth "Pod 11 Team") are the following:

Reem A

Debbie C

Fabian F

Tim Huynh

Winnie L

Xinyi Y

If you have any questions or concerns about this study, please contact Prof. Pandeliev at [email address removed].

Purpose

The purpose of this study is to assess how office workers are affected by the abrupt transition to working from home as a result of the pandemic and how employers are supporting employees in their new work environments. This study will identify pain points that office workers experience while working at home and areas of improvement if there are any gaps between employer support and employee expectations.

Procedure

Participants will do a 30-minute semi-structured interview with one or more named members of our group. The interview will be conducted via Zoom (or other meeting-software that is agreed upon) at a mutually convenient day and time. Participants will describe their valuations of certain work-related ideals and their employers' meeting of these ideals. Participants will also describe aspects of their current working conditions. One group member will conduct the interview and other members might take notes.

Right to withdraw

Participation is voluntary and participants can withdraw at any part of the study without any penalties. Information collected will be removed from the results upon request. Please contact any member of the research team if you wish to withdraw your data from the study.

Permission to record, data privacy, and confidentiality

Participants can decide whether their interviews are recorded and, if permitted, whether video as well as audio are recorded. Notes and recordings will only be accessible to the six named members of our group. Information that might identify participants will be anonymized if voluntarily provided and excluded if automatically detected. Our group will report anonymous and general findings to the lecturer and teaching assistant of this course. Data (aside from general findings) will be destroyed after grades are finalized for the INF2169 course [within three months].

Informed consent

- As an adult aged 18 years or older, I hereby consent to participate in a study conducted by Pod 11 Team for INF2169, for the purpose of exploring working conditions and employer support of work-from-home workers. I understand that:
- The procedure to be used is a semi-structured remote interview.
- Instead of monetary compensation, I get to participate in research, express issues and contribute to this study.
- I may express concerns, ask to pause, skip an activity, or withdraw at any time without explanation or penalty.
- My data, including my image and voice, may be shared with the course lecturer and teaching assistants and may be used in in-class presentations.
- My data will be kept confidential and my identity or any identifying information will not be associated with it.
- My data will be part of general findings that are reported to the course lecturer and teaching assistant.

This activity constitutes reflective and professional practice and is exempt from Research Ethics Board (REB) Review per <https://research.utoronto.ca/ethics-human-research/activities-exempt-human-ethics-review>

APPENDIX III: SURVEY SCRIPT

Please read and sign the consent form. (Electronic Consent Form)

Screener

1. Are you a full-time (35+ hours per week) office worker?

- Yes (*Continue*)
- No (*Reject*)

2. Prior to COVID-19 were you working in an office at least 4 out of 5 workdays per week?

- Yes (*Continue*)
- No (*Reject*)

3. Are you currently working from home for at least 4 out of 5 workdays per week due to COVID-19?

- Yes (*Accept*)
- No (*Reject*)

Part 1: Productivity

Please specify your degree of agreement with the statements below:

1.1. I feel like I am working on my job for more hours at home than when I was at the office.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

1.2. I feel like I have more office work to do at home than when I was at the office.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

1.3. Feeling productive is my top priority.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

1.4. *Measurements* (i.e. objective evaluations) of my productivity are important to my organization.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

1.5. *Perceptions* (i.e. subjective opinions) of my productivity are important to my organization.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

1.6. I feel more productive when working from home.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

1.7. What factors below have impacted your productivity while working at home? (Select all that apply)

- Family & Friends (parenting, caretaking, socializing)
- Mental Health (depression, anxiety, COVID-19 fears)
- Physical Environment (distractions, lack of windows, air quality, temperature)
- Poor Work Communication (lack of direction, coworker connections)
- Technology (No additional monitor, keyboard, mouse, poor Internet)
- My productivity was not impacted
- Other - specify: _____ (fill in blank)
- Prefer not to answer

Part 2: Work Environments

Please specify your degree of agreement with the statements below:

2.1. I am able to separate my professional and personal life while working from home.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

2.2. Working from home has disrupted my work-life balance.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

2.3. I have made changes to my *home environment* to accommodate for remote working.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

2.4. If you answered "Agree" or "Strongly Agree" to the previous question, please indicate what changes you made to your *home environment*. If you answered "Strongly Disagree" or "Disagree", please explain why not: (Open answer)

2.5. I have made changes to my *daily routines* to accommodate for remote working.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

2.6. If you answered "Agree" or "Strongly Agree" to the previous question, please indicate what changes you made to your *daily routines*. If you answered "Strongly Disagree" or "Disagree", please explain why not: (Open answer)

2.7. If you have made notable changes to your environment and/or routines, have they been more by necessity or by choice?

Mostly more by necessity | Somewhat more by necessity | Equally by necessity and choice | Somewhat more by choice | Mostly more by choice | I have not received support from my employer

Part 3: Employer Support

3.1. During the COVID-19 pandemic, how frequently do you work overtime (i.e. working additional hours outside of required working hours) at home? (Select One)

- Multiple times a week
- Once a week
- Once a month
- Less than once a month

3.2. If you work overtime, how are you compensated by your employer for the additional hours? (Select all that apply)

- I was paid for the additional time worked
- I was allocated extra time off to use on a future date
- I was not compensated and my employer was aware of my overtime
- I was not compensated and my employer was not aware of my overtime
- I did not work overtime
- Other - specify: _____ (fill in blank)

3.3. What types of support has your employer provided you since the start of the pandemic? (Select all that apply)

- Technical (hardware access, software access, expert help)
- Financial (stipends, expenses coverage)
- Career (mentorship, networking opportunities, skills development)
- Wellness (info/training, resources, gatherings)
- Direction (expectations, updates, timelines)
- I have not received support from my employer
- Other - specify: _____ (fill in blank)
- Prefer not to answer

Please specify your degree of agreement with the statements below:

3.4. Working from home is more challenging than working at the office

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

3.5. My employer has made a satisfactory effort to support my mental health.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

3.6. My employer has made a satisfactory effort to support my physical health.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

3.7. My employer has reasonable work expectations during the pandemic.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

3.8. My employer has communicated a clear timeline about its future plans.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

3.9. I felt supported by my employer throughout the COVID-19 transition to work from home.

Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly Agree

3.10. Overall, how dissatisfied or satisfied are you with the support you received from your employer to work from home during the pandemic?

Very dissatisfied | Somewhat dissatisfied | Neither satisfied nor dissatisfied | Somewhat satisfied | Very satisfied

3.11. Feel free to explain the rating for your employer's support: (Open answer)

3.12. How supportive was your employer compared to your expectations?

Much less supportive | Somewhat less supportive | As expected | Somewhat more supportive | Much more supportive

3.13. Feel free to explain the rating for your expectations of your employer's support: (Open answer)

Conclusion

Thank you for taking the time to complete our survey. Your responses will go a long way in helping us complete our research! If you have any additional comments or questions about our study, please feel free to contact any of our team members listed at the top of this survey. On behalf of the Pod 11 Team, we'd like to wish you a safe and productive rest of the year! Please select "submit" to submit your responses.

Data collection

Your responses will be collected through Google Forms, which produces an Excel spreadsheet with all the survey results. We will anonymize the participants and conduct further analysis on Excel using the quantitative data and use an affinity diagram to extract major themes from the qualitative data.

APPENDIX IV: INTERVIEW SCRIPT

Introduction

Hi, my name is [interviewer name] and my note-taker is [note-taker name]. You're being asked to participate in a research study for a course project at the University of Toronto. We're trying to understand the effect of transitioning from working to home abruptly as a result of the COVID-19 pandemic on office workers who were previously accustomed to working in office spaces. In this interview, I'll be asking you about your productivity, work environment and employer support.

Do we have your permission to record this interview session?

- Yes [Ask if video and audio, or just audio]
- No [Do no record]

Consent Reminder

[Ensure participant signs the interview consent form and outline ethics of the procedure (participant confidentiality and voluntary withdrawal).]

I'd like to remind you that participation is voluntary. Please only reveal information that you're comfortable sharing. You can decline to answer any question, and you can withdraw at any time —no questions asked, no offence taken.

Also, any identifying information will only be accessible to myself and my five teammates. We'll destroy it [within three months].

Introduction (Warm Up)

How long have you been working from home since COVID started?

In a few sentences, can you summarize your job duties?

Can you give a quick overview of your typical workday?

Part 1: Productivity

1.1. What are the general differences between working on-site and working from home?

1.2. Has your productivity changed since working from home? If so, how?

1.3. How has remote working impacted teamwork and communication at your organization?

1.4. How has working from home impacted your motivation?

Additional Questions

[If participant had no differences regarding experience (1.1) and productivity (1.2)]

4.1. How do you define productivity?

4.2. How do you normally keep productive when WFH?

Part 2: Work Environments

2.1. Please describe your current space setup for working at home.

Follow-up 1: (Yes or No) *Have you made any upgrades to your home environment to do work for your company?*

Follow-up 2: (Yes to Follow-up 2) *Did you or your employer pay for the upgrade(s)? How do you feel about that?*

2.2. Does your work require any special equipment?

Follow-up: (Yes) *How does your employer ensure that you have the required equipment to work at home?*

2.3. Since the COVID-19 pandemic started, have you faced any obstacles related to working remotely? If so, what are they?

Follow-up 1: *Do you feel like “your average work day” is longer or shorter? Why?*

Follow-up 2: *How do you feel about that?*

2.4. How has your personal health (mental and physical) been impacted by working from home?

Prompt: *For example, have your eating habits and physical activity changed as a result of working remotely?*

Additional Questions

[If participant said 'No upgrades, special equipment, obstacles or health impacts']

4.3 Is there anything that you miss that was at the office but not at home?

Part 3: Employer Support

3.1. How has your employer supported your efforts to work from home effectively?

Follow-up: *Has it improved your WFH experience?*

Follow-up: *Do you feel you are receiving enough support?*

Follow-up: *How can employer support be improved?*

3.2 Now that you're working from home, has your employer adjusted their work expectations?

Follow-up: *How do you feel about this?*

Additional Questions

[If participant does not receive or feel there is any support]

[If participant said 'No change in employer expectations' (3.3.)]

4.4 How do work expectations from your employer fit your current situation?

Conclusion (Cool-down)

Of all the topics discussed today, what issue was the most significant to you?

If your employer could grant you one work-related request, what would it be?

Do you prefer working from home over the office?

(Is there anything else you would like to add?) Do you have any questions for us?

Survey Invitation and Thanks

Great. One last thing: we're also conducting a survey for this study. So, if you have 10-15 mins to spare we'd appreciate if you could participate. You can find the link in the follow-up email you'll receive soon. So please keep an eye out for that.

It has been a pleasure interviewing you. Thank you so much for being with us today. Have a great one!

APPENDIX V: NOTETAKING GUIDE TEMPLATE

Participant ID	Data ID	Timestamp	Category	Question Number	Observation	Open Code 1	Open Code 2	Observer Name
<i>P1</i>	<i>100</i>	<i>0:00</i>	<i>Drop Down</i>	<i>Drop Down</i>	<i>Note</i>	<i>Code</i>	<i>Code</i>	<i>Name of note taker</i>

Category Drop Down Options:

- Warm-up
- Productivity
- Work Environments
- Employer Support
- Cool-down

Question Number Drop Down Options:

- Warm Up 1 - WFH Duration
- Warm Up 2 - Job Duties
- Warm Up 3 - Typical Workday
- 1.1 - General Differences
- 1.2 - Productivity Change
- 1.3 - Teamwork Communication
- 1.4 - Motivation
- 2.1 - WFH Setup
- 2.2 - Special Equipment
- 2.3 - Remote Obstacles
- 2.4 - Personal Health
- 3.1 - Employer Support
- 3.2 - Employer Expectations
- Cool Down 1 - Most Significant
- Cool Down 2 - Work Wish
- Cool Down 3 - Preference
- 4.1 - Defining Productivity (Additional Questions)
- 4.2 - Productivity Tactics (Additional Questions)
- 4.3 - Missing Office (Additional Questions)
- 4.4 - Work Expectation Fit (Additional Questions)