Returning to the Office During the COVID-19 Pandemic Recovery:
Early Indicators from China

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ABSTRACT

The COVID-19 pandemic forced many people to abruptly shift to remote work in early 2020. But as countries progressed through a recovery from the pandemic, as occurred in China beginning in the spring of 2020, companies went through a process of reopening their offices. People worked in a hybrid mode in which they could decide how to divide their time working from home and in the office. In this research, we explored what are the key factors that shaped employees' decisions. We conducted a survey and interviews with employees in China of a global technology company. The data demonstrated people's work time arrangements between home and office, their experiences when working from home, and their preferred work mode. Through the interviews, we identified people's diverse strategies and reasons behind the decisions of where to work during the hybrid work phase.

CCS CONCEPTS

• **Human-centered computing** → *Empirical studies in collaborative and social computing*.

KEYWORDS

Remote work, work from home, telework, hybrid work, COVID-19

1 INTRODUCTION

The COVID-19 pandemic forced many knowledge workers to abruptly shift to remote work at a global scale in early 2020. The pandemic response has placed people in a large, naturally occurring experiment on remote working, which therefore provides an opportunity for researchers to further study remote work topics in a different context from traditional remote work under normal circumstances.

Due to different epidemic situations and responses, the current recovery progress from the pandemic has varied widely among countries. Some countries are ahead of others, where the spread of coronavirus has been largely controlled, and the society and economy are recovering from the COVID-19 pandemic. In China, the pandemic recovery process started in spring of 2020, when companies went through a process of reopening their offices, and employees transitioned from mandated work-from-home to a hybrid mode of working from home and in the office. Employees were allowed to return back to the office while still maintaining the flexibility to work from home when necessary. During the hybrid mode, employees could decide how to divide their work time between home and office based on various considerations.

Although many timely studies have been published recently to examine the remote work experience in the context of the COVID-19 pandemic [5–7, 9, 25, 27, 30], there is a lack of studies that focus on the hybrid work phrase during the pandemic recovery. In this research, we aim to fill this gap to understand employees' practices and experiences in hybrid work mode, and explore what are the key factors that impact their work time arrangement between home and office. Specifically, we conducted an online survey (N = 475) and semi-structured interviews (N = 12) on knowledge workers from a global technology company in three cities in China. At the time of our survey and interviews, they had been working in hybrid mode for more than three months, so their practices and experiences had largely stabilized over time. From our study, we found that the participants in general perceived a higher productivity and a higher satisfaction in hybrid work mode, compared to fully working from home.

As many workplaces in some global regions are still closed, our findings are valuable in informing policy makers and organizational

leaders in helping them plan and prepare for the hybrid work mode phase during the COVID-19 pandemic recovery. In addition, this unprecedented hybrid work mode is likely to affect people's attitudes and strategies towards remote work, which may indicate the advantages and disadvantages of different work modes, and shape best practices for the future work norm. Therefore, our study can complement other studies and contribute to the overall understanding of remote work research in this new work reality.

2 RELATED WORK

Remote work, also referred to as telework, telecommuting, or work-from-home (WFH), affords employees a flexible work arrangement in which they do not need to work at a central workplace. Remote work has become increasingly adopted by many companies. According to a survey by Gallup, more than 43% of the workers reported working remotely at least one day a week in 2017 [17]. However, remote work is not always considered to be beneficial in reality. For example, Yahoo banned employees from working from home for better communication and collaboration [21]. Remote work constitutes an important dimension in the future of work, but its long-term effect is still inconclusive.

Prior research has investigated the benefits and drawbacks of remote work from various aspects [1–3, 11, 13, 20, 24]. In general, many studies show that remote work can increase productivity and lead to a higher job satisfaction [4, 8, 10, 18], because remote work provides employees more flexible working time and better work-life balance. On the other hand, remote work might have a negative impact on productivity. For example, working from home might decrease the efficiency of developer communication in software development [29]. Researchers also identify specific challenges that impact people's well-being during remote work, such as blurring the work-life boundary [2] and social isolation from co-workers [15], and may vary for different types of work [14, 26, 28]. Creative work, new work streams, and tasks that require extensive collaboration can be harder to achieve through remote work than work that is easily codified.

Previous studies are mostly about remote work experiences under normal circumstances, in which remote work typically involves a small portion of the workforce and limited job roles. The initial response to the coronavirus mandated work-from-home to most knowledge workers, as well as imposed various health and social restrictions. These pandemic conditions likely changed the dynamics of working from home, suggesting the need to study how it differed from traditional remote work.

The COVID-19 pandemic response provided researchers with a unique time window to examine an essentially global experiment on remote work at a large scale. Researchers responded quickly to present timely and important findings on remote work experiences during the pandemic. For example, several studies [5, 12, 25] focused on the productivity of software developers working from home during the pandemic. Yang et al. estimated how work-from-home affects team collaboration during COVID-19 [30]. Nolan et al. explored the impact of remote work on well-being aspects [23]. These studies mainly examined the experiences of fully working from home during the COVID-19 lock down phrase.

Our study focuses on the experiences during the hybrid work phase of the COVID-19 pandemic recovery. We explored how employees divided their work time between home and office in hybrid work mode during the pandemic recovery, and what potential factors affected their decisions. There are studies that discuss the reasons why people telework [3, 16, 19] during normal times. However, our study illustrates the difference during pandemic times when people first do not have a choice of coming to the office during the immediate pandemic response, then go through a hybrid work phase where they have to make new decisions about returning to the office after office reopening.

3 STUDY METHOD

In this study, we aimed to understand the experiences and practices of people in China during this hybrid working phase of the COVID-19 pandemic recovery. Specifically, we were interested in three aspects when people worked in the hybrid mode: 1) How did they arrange their work time between home and office? 2) How did working from home impact their work and well-being? 3) How much did people prefer hybrid work mode? We conducted an online survey and follow-up interviews on employees in China of a global high technology company.

3.1 Background

On January 23, 2020 at 2 am, Wuhan issued the first notice of lock down to prevent the spread of the pandemic. Companies quickly closed office facilities in mainland China, initially until February 9th, but then extended twice until February 17th, based on the severity of the situation. On February 17, when the situation dramatically eased, companies in China gradually started to welcome employees to come back into the office.

The company we surveyed is a multinational technology company, with worksites in several cities in China. Following the policy and guidelines of the government, the company cautiously soft-opened on February 17th and allowed the employees to re-enter office workplaces, although people were still encouraged to work from home to minimize risks. From March 13th, the employees were allowed to work from home or in the office in a hybrid work mode. By the time of our survey, they had been working in the hybrid mode for more than three months. Therefore, they could share what settled hybrid work patterns they had developed.

3.2 Survey

Our survey was implemented and distributed using Microsoft Forms. The survey was completely anonymous and voluntary. It contained 38 questions in English in total as English is the official corporate language. Before the survey, the study went through a compliance review and received approval for the study procedures from the institution's ethics review board. On average, it took about 18 minutes to complete. To encourage the participation, the participants could enter their names in a separate form to join a lottery to win twenty gifts. In addition to the questions to collect demographic information (e.g., gender, job role, job discipline, location), our survey contained questions asking about:

- Working from home experiences, including overall work productivity and job satisfaction when working from home,

as well as how remote work was good or bad from various aspects (e.g., no commute, work-life balance, social isolation) regarding individual work, team collaboration, and human well-being;

- Work time arrangement between home and office, including how many days they worked in the office each week, and the specific reasons and considerations of returning to the office.
- Preferences on hybrid work mode, compared with fully working from home during COVID-19 and fully working in the office before COVID-19.

The survey was sent to 3170 employees of the company via email in June 2020. We received a total of 475 responses in two weeks, with a 15% response rate. Of all the respondents, 66.3% reported as being male, 22.3% as being female, and 11.4% did not report their gender. 38.1% of the respondents reported that they lived with kids. The job roles of the respondents included Software Engineer (70.1%), Program Manager/Designer (14.3%), Researcher (10.1%), Business Operation (2.1%), Sales/Marketing (1.5%), and Data Scientist (1.1%). 19% of the respondents were managers. Regarding their prior experiences of working from home, 55.2% of the respondents had never worked from home, 33.7% worked from home occasionally, and 11.1% worked from home in a regular basis. Most of the respondents were located in three cities: Beijing (57.9%), Suzhou (20.4%), and Shanghai (20.4%). Beijing and Shanghai are two major metropolitan cities in North China and East China, respectively; while Suzhou is a medium-size one in the east.

3.3 Interviews

We conducted semi-structured interviews with 12 employees from the company in July and August 2020. The interviews were voluntary. The interviews further explored the underlying reasons about their decisions and strategies in depth. The participants were intentionally invited from our survey respondents to cover different genders, disciplines, roles, and locations (Table 1). They were all working in hybrid mode during data collection in August. Each interview session lasted for about one hour, which was conducted in Mandarin through remote conference call. We recorded the audio for each session. The interviews investigated how the participants worked, the strategies they took when planning their work, their considerations of time arrangement, and the benefits and challenges they experienced. More specific questions were also asked about their job duties and team collaboration to understand the reasons behind their choices. We analyzed the interview data with the narrative analysis method [22]. For each participant, we take a close look at interesting stories they shared about their working experiences while working in the hybrid mode. Those interesting stories help us understand the motivations behind their feeling, thoughts, and behaviors.

4 RESULTS

4.1 Work Time Arrangement between Home and Office

In the hybrid work mode after office soft-opening, employees could flexibly choose to work from home or in the office. Via the survey and interviews, we asked the participants how they divided their working time between home and office, and what were their considerations behind.

Our survey revealed that the time arrangements between office and home were diverse. While 10.7% of the respondents reported that they completely worked from home, and 20.2% completely worked in office, nearly 70% of the respondents chose to combine the benefits of working from home and office. Of those who returned to the office, about half of the respondents (51.3 %) followed a regular schedule, and the other half (48.7%) went to the office on demand; 16% of the respondents reported spending one day in the office on average each week, with corresponding percentages for two (20%), three (22%), four (18%) and five (24%) days in the office. The average number of days working in the office were also evenly diverse.

The perceived benefits and challenges of work-from-home largely affected the considerations on returning to the office in hybrid mode. Our survey identified several factors that attracted the respondents to work in the office, including better workplace set up (63%), meetings in-person (43%), social engagements with colleagues (43%), and working on specific tasks in the office (42%). On the other hand, there were several considerations mentioned for working from home, including saving commute time (59%), necessary family care (42%), more focus time (39%), reducing health risk (33%), and weather (27%). The considerations may vary in different locations. For example, we found the respondents in Suzhou considered the weather factor more than people in other cities. From the interviews with participants from Suzhou, it might be because during the survey period, Suzhou was in the plum rain season when a lot of rain made commuting more difficult.

The schedule of colleagues was a factor people may consider. More than 45% of the respondents who worked in the office reported that they synchronized with other colleagues about when to go to office. One participant in our interviews (P4) explicitly mentioned that, *"This way, I can have chances to have some in-depth discussions with my colleagues face-to-face."* Although they consulted with their managers, the participants generally did not feel pressure from others when they made their decisions on working from home or in the office. 70.1% of the respondents thought that it was "entirely or mostly my decision" on how they arranged time. Only 6.1% reported that their mangers made the decisions. 42.8% of the respondents did not feel obligated to disclose the reasons to work from home or in office. All of our interviewees mentioned that they were flexible and had autonomy in arranging their work times between office and home, and felt their managers and colleagues were supportive about their decisions.

4.2 Experiences of Working from Home

When working from home, most participants perceived overall productivity of their teams remained unchanged or even improved compared with pre-COVID-19. First, related to teamwork experience, the reported usage of various communication and collaboration tools increased significantly. Specifically, respondents reported increased usage of online collaboration platforms (85.3%), phone calls (55.6%), emails (44.9%) and social communication tools like WeChat (45.8%). Many respondents reported significantly increased or increased group (36.8%) and 1-on-1 (38.6%) meetings. One participant (P8) said, *"Regular sync up meeting with team more frequently could*

	Gender	Discipline	Role	Location
P1	Male	Researcher	Manager	Beijing
P2	Female	Program Manager	Manager	Beijing
P3	Male	Engineer	Manager	Beijing
P4	Female	Researcher	Individual Contributor	Beijing
P5	Male	Engineer	Individual Contributor	Shanghai
P6	Female	Sales/Marketing	Individual Contributor	Shanghai
P7	Female	Designer	Individual Contributor	Beijing
P8	Male	Engineer	Individual Contributor	Suzhou
P9	Male	Program Manager	Individual Contributor	Suzhou
P10	Male	Engineer	Manager	Beijing
P11	Female	Business Manager	Manager	Suzhou
P12	Female	Engineer	Individual Contributor	Beijing

Table 1: Participants of the Interviews

make the team members feel more like working in office." The meeting experiences were in general satisfactory in terms of perceived efficiency and flexibility. However, the perceived effectiveness of the meetings was slightly decreased, which is probably due to the limitations of collaboration/communication tools and the lack of face to face engagements. A marketing team interviewee (P6) told us that she set up more 1-on-1 meetings with her colleagues during the few months of working fully from home, which was not needed when working in the office. According to her, *"If we cannot see each other or have casual chats, many information are missing and thus I can lose awareness of myself in my colleagues, which I have to leverage extra 1 on 1 meetings to compensate with it."*

When working from home, people also missed the social and physical interactions with teammates and colleagues. For the question *"What do you miss most about working in office? Please check all that apply."* respondents mentioned missing workplace facilities (55%), atmosphere (53%), social interactions over lunch (43%), and physical interactions with teammates (43%). During our follow-up interviews, several participants expressed their concerns about this issue, and tried to have more small talk during business meetings or online group activities. One participant (P11) said, *"Now we are moving games to online, and our teammates really enjoy it."*

In our survey, we used two questions "Compared with pre-COVID-19, how has your productivity changed?" and "Please rate your overall satisfaction with working from home during COVID-19?" to probe participants' overall productivity and satisfaction when working from home. The respondents reported higher perceived personal productivity (6% significantly more productive, 31% more productive, 43% about the same, 18% less productive, 1% significantly less productive). However, it also changed over time. People experienced a learning curve to master the time management skills to maintain a certain level of productivity. One interviewee (P3) mentioned that at first they felt unsure about how to make their team meetings effective enough, commenting *"My teammates often think online meetings are too formal, so they were more reluctant to call for trivial subjects."* But after a certain period of trial-and-error, they learned how to better leverage their remote team meetings. Participants in our survey also reported even higher

satisfaction of working from home during COVID-19 (22% very satisfied, 45% somewhat satisfied, 15% neither satisfied nor dissatisfied, 14% somewhat dissatisfied, 5% very dissatisfied). In our interviews, they explained that working from home could decrease the health risks while still keeping a satisfactory level of productivity. One participant (P7) told us, *"I feel WFH is of great worth for me and my family. We can be together and I can keep working."*

To understand how work-from-home experience factors may correlate with perceived productivity and satisfaction, we calculated Pearson's correlation between specific questions that are concerned with work-from-home experiences and the perceptions of productivity and satisfaction. Table 2 and 3 show the experience questions that have correlations above 0.3 or lower than -0.3 with perceived productivity and satisfaction while working from home. Some interesting correlations: a sense of better control over work, more efficient meetings, and more time to complete work were correlated with better overall sense of productivity; better work life balance and spending less money were correlated with higher satisfaction when working from home.

4.3 Preferences on Hybrid Work Mode

In the survey, we asked participants to compare the productivity in the hybrid mode with working in office before COVID-19, the hybrid mode was considered "much more productive" (10.3%) and "somewhat more productive" (38.2%), with only a few downvotes (5.5% "somewhat less productive" and 0.6% "much less productive").

Regarding their preferred work mode, 69% of the respondents selected the hybrid mode, compared to 19% who preferred completely working from home and 11% who preferred completely working in the office. In the interviews, we also asked the participants about their outlook to future of work. Most participants preferred the hybrid work mode as a work option after COVID-19, because with hybrid mode, knowledge workers could generally combine the advantages of both working from home and in the office to maximize their productivity and flexibility. As one of our interviewees (P12) told us, *"I feel more efficient and effective when working from home. The only drawback of work-from-home to me is the lack of opportunities for socializing. That's why I like the hybrid mode."* One program manager we interviewed (P2) who enjoys the

	WFH Experience Questions	Correlation	p-value
1	I have better work environment.	0.473998	p<0.001
2	I have less distractions or interruptions.	0.473791	p<0.001
3	I have more control over work.	0.386096	p<0.001
4	I have more efficient meetings.	0.333623	p<0.001
5	I have more time to complete work.	0.321148	p<0.001
6	I feel bad to be lack of emotional connections with others.	-0.31091	p<0.001
7	I feel bad about lack of social interactions with colleagues.	-0.32218	p<0.001
8	I feel bad to be less aware of colleagues' work.	-0.32633	p<0.001
9	I feel bad because of missing facilities (e.g. whiteboard) to illustrate complex problems.	-0.34024	p<0.001
10	I feel difficult to communicate and coordinate with colleagues.	-0.35327	p<0.001
11	I feel bad being lack of a routine.	-0.35664	p<0.01

Table 2: Experiences questions that have correlations above 0.3 or lower than -0.3 with their productivity of WFH.

	WFH Experience Questions	Correlation	p-value
1	I have better work environment.	0.363075	p<0.001
2	I have better work life balance.	0.335823	p<0.001
3	I feel good to spend less money on commute, food etc.	0.317482	p<0.001
4	I feel bad to be lack of emotional connections with others.	-0.31091	p<0.001
5	I feel bad being lack of a routine.	-0.31931	p<0.001
6	I feel bad to be less aware of colleagues' work.	-0.33301	p<0.001

Table 3: Experiences questions that have correlations above 0.3 or lower than -0.3 with their satisfaction of WFH.

work atmosphere in the office was not a fan of remote work. But she still supported the hybrid mode. She commented, *" I do not think permanent work-from-home will work, but I believe the hybrid working may be an optimal solution for the future. It can provide us much flexibility to leverage benefits from both remote work and office work."* However, there are various challenges ahead for the hybrid work mode. For example, one participant (P1) mentioned in the interview that he had difficulty synchronizing home machines and office machines. He pointed out, *"Special setup must be done to make future transitions between home PC and office PC more smooth, otherwise each time moving to a different place requires re-configuration and synchronization in the PC there."*

5   DISCUSSION AND LIMITATIONS

It should be noted that the context for this hybrid work phase was what people first experienced after an extended lock down. People's behavior, perceptions, and preferences during the hybrid mode could have been shaped by a rebound effect of just having emerged from lock down. People's experience of working from home may also be related to the remote working policies and the progress of the pandemic in other countries. For example, one interviewee (P7) said that because a large number of colleagues in the United States (where the company is headquartered) worked from home, it afforded more meetings during evening times for the United States.

The survey participants and interviewees were in general satisfied with their working from home. However, we also identified the lack of appropriate workplace setup at home as one important factor that affected the experience. For those interviewees with private and quiet workspaces and periods of uninterrupted time, they tended to prefer working from home. High productivity when working from home might be harder to achieve if people are easily interrupted.

Communication technology is another important element that may contribute to effective remote work, especially for information workers who need a lot of collaboration. Since people cannot communicate face to face in meeting rooms and leverage whiteboards to discuss problems, working from home became less efficient. Thus, people chose to come into the office to compensate for these disadvantages. To support better remote work, communication tools should be enhanced to compensate for the inefficiency of communication caused by the inability to meet, especially around providing a shared drawing tool.

It is important to keep in mind the unusual context of our research on people's behaviors and attitudes towards the hybrid work mode. There were many factors during the extraordinary conditions of the pandemic that also affected people's judgment and decision-making. For example, during the early stage of the epidemic, some public transportation was restricted, which could have directly affected people's decisions about commuting into the office. Also, public health officials encouraged people to keep social distance and reduce travelling, which may have made people feel safer when working from home. Moreover, during hybrid work mode, kindergartens and schools were not open, so parents may have needed to actively manage their children when working at home.

This research focused on the work experiences of one information technology company in China, to which we had access to

survey and interview its employees. It is important to acknowledge the limitation that the data came from only one company. This company's focus on information technology products and its technology infrastructure enabled much of the work to be conducted remotely from home. As a global company with headquarters in the United States, the work policies in China involved some coordination with global corporate policies, which might be different than companies headquartered locally in China.

6 CONCLUSION

We reported the findings of an online survey and interviews conducted on employees of a global technology company in China to understand their experiences during the hybrid work mode during the recovery of the the COVID-19 pandemic. Our study demonstrates how knowledge workers in China arranged their working time between home and the office. We also reveal diverse factors that may impact people's experiences of working from home and returning to the office and the strategies they take for time arrangement. The data allow for comparing what the practices in China were like with data collected in other parts of the world. In addition, these results can help improve the hybrid return-to-work experience in other regions, especially paying attention to how the factors listed shape how people chose to return to work when their workplace re-opens.

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