

# Winter 20/21; 2<sup>nd</sup> ETH Covid-19 remote working study

## Summary of survey responses and recommendations

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# 1 Management Summary

From December 2020 to March 2021, the Chair of Work and Organizational Psychology (D-MTEC) invited all ETH employees to participate in a study on COVID-19 associated remote working and virtual collaboration experiences (1 baseline survey in December 2020 followed by 6 fortnightly surveys from January 2021 until the end of March 2021). This study was launched in the midst of the second COVID-19 wave in Switzerland and completes the first data collection phase back in the Spring of 2020 (see report of the first ETH Covid-19 related remote working and virtual collaboration study [here](#)).

On average, 1849 employees used the opportunity to reflect on their work practices on a fortnightly basis. Indicators for well-being, collaboration, and performance generally showed that employees coped well with the demands of remote working and virtual cooperation. Throughout all six survey timepoints, work engagement, job satisfaction, knowledge sharing and knowledge receiving was rated as high and coworkers as well as supervisors were generally perceived as supportive. Supervisors reported high levels of trust in their employees and perceived them as performing well. Conflict, negative affect, and social isolation, on the other hand, were rated as low throughout, although doctoral students and postdoctoral researchers appeared to be the most vulnerable group.

Job autonomy was generally related to more work engagement, higher work satisfaction, more positive emotions, less task conflicts, and less social isolation. Task interdependence was positively related to knowledge transfer but showed inconsistent relationships with other variables. Employees who generally prefer to work in teams were less satisfied with their jobs and felt more isolated.

Open comments in the surveys showed a large range of personal experiences. Positive experiences related to increased performance and efficiency gains; positive collaboration experiences inside and outside of ETH; increased flexibility in terms of place / time of work and improved work-family integration. Negative experiences concerned overwork and stress, social isolation, and lack of supervisor support.

From the responses regarding expectations for the future work situation at the ETH Zürich several key messages could be derived:

- There is a continued general desire for flexibility regarding workplace and time also after restrictions are suspended.
- Most people wish to spend (at least) two days working remotely. This result is consistent across all professional groups, people with or without a leadership position, and gender.
- The opportunity for (informal) social exchange and good leadership are seen as central to successful new (hybrid) work practices.

Based on our findings, we derive a set of recommendations for consideration by the ETH Executive Board and all ETH unit heads to discuss future (hybrid) work arrangements that match both people's desire for more flexibility and the requirements of their tasks, while also helping to cope with the ongoing demands of the Covid-19 pandemic.

Lastly, it is important to keep in mind that individuals' reactions to this extraordinary situation differ widely and that an open and inclusive dialogue at all levels of the ETH is therefore crucial.

## 2 Overview of the Survey

Following the first wave of the global Covid-19 pandemic in Spring 2020 and the first study conducted to analyze the impact of the pandemic on ETH Zürich employees, in December 2020, a second study was launched. With a baseline survey including questions on work preferences and habits prior to the Covid-19 outbreak launched on December 15<sup>th</sup>, 2020 (t0 survey) and 6 fortnightly surveys between January and March 2021 (t1-6 surveys), the effects of the Covid-19 restrictions on ETH Zürich's employees could continuously be monitored.

With the present report, we provide an overview of the results and propose several recommendations for managing the ongoing challenges that the Covid-19 pandemic presents to ETH Zürich and its employees and how future work practices may be changed as a result.

We initiated the fortnightly survey on December 15<sup>th</sup>, 2020, by inviting all ETH Zürich employees via email to describe their work situation prior to the Covid-19 outbreak (t0 survey). Starting from January 18<sup>th</sup>, 2021 (t1 survey) to March 29<sup>th</sup>, 2021 (t6 survey), we asked all participants from this baseline survey as well as those who had completed the last survey of the first study back in May 2020 (3356 ETH Zürich employees) on a fortnightly basis to tell us about their experiences during the previous two weeks.

Most survey questions were identical throughout, with a few additional questions included in the last survey (t6 survey). Whereas some questions were stand-alone questions, most were bundled to represent validated scales for measuring certain characteristics of the persons answering the survey and indicators for their perception of the exceptional work situation. An overview of all questions and the underlying characteristics and indicators is provided in the Appendix (7.2-7.4).

All 3356 ETH Zürich employees who had participated in the t0 survey were invited to the subsequent survey waves, yet the participation in each weekly wave of the survey varied. Generally, participation declined over the course of the six survey waves leading to smaller samples for later waves. For the last wave, participation increased again. Table 1 provides an overview of the initial t0 sample and the subsequent t1 to t6 samples.

**Table 1. Overview of the survey samples per wave**

Survey	% Occupational groups	% Gender	% with/without supervisory responsibility
t0 N = 3356	23 Administrative staff 11 Technical staff 38 Doctoral students/post-doctoral researchers 8 Professors/Senior scientists	45 male 41 female 14 other	18 with supervisory responsibility 82 without supervisory responsibility
t1 N = 2106	28 Administrative staff 14 Technical staff 37 Doctoral students/post-doctoral researchers 8 Professors/Senior scientists	45 male 46 female 9 other	18 with supervisory responsibility 82 without supervisory responsibility
t2 N = 1765	29 Administrative staff 13 Technical staff 38 Doctoral students/post-doctoral researchers 8 Professors/Senior scientists	44 male 47 female 9 other	18 with supervisory responsibility 82 without supervisory responsibility
t3 N = 1450	33 Administrative staff 14 Technical staff 37 Doctoral students/post-doctoral researchers 7 Professors/Senior scientists	44 male 48 female 8 other	18 with supervisory responsibility 82 without supervisory responsibility

t4 N = 1310	33 Administrative staff 14 Technical staff 36 Doctoral students/post-doctoral researchers 7 Professors/Senior scientists	45male 48 female 7 other	20 with supervisory responsibility 80 without supervisory responsibility
t5 N = 1291	35 Administrative staff 14 Technical staff 35 Doctoral students/post-doctoral researchers 7 Professors/Senior scientists	43 male 50 female 7 other	20 with supervisory responsibility 80 without supervisory responsibility
t6 N = 1664	30 Administrative staff 13 Technical staff 38 Doctoral students/post-doctoral researchers 7 Professors/Senior scientists	46 male 46 female 8 other	17 with supervisory responsibility 83 without supervisory responsibility

# 3 Trends in Responses Over Six Survey Waves

Over the six survey waves, we monitored indicators for employee well-being, collaboration, and performance. We analyzed these indicators based on three sets of comparisons: occupational groups (administrative staff, technical staff, doctoral students/postdoctoral researchers, professors/senior scientists), gender (female/male/other), and hierarchical position (with/without supervisory responsibility). All results are presented regarding these groups. We conducted statistical tests to check for significant differences between groups and across time. Here, we highlight the most important results in terms of an overall view of employee well-being, collaboration, and performance as well as where action might be indicated regarding future work practices. The most relevant results are also presented as graphs. Unless noted otherwise, please note that most indicators were measured on a five-point response scale (see Appendix for all indicators and response scales).

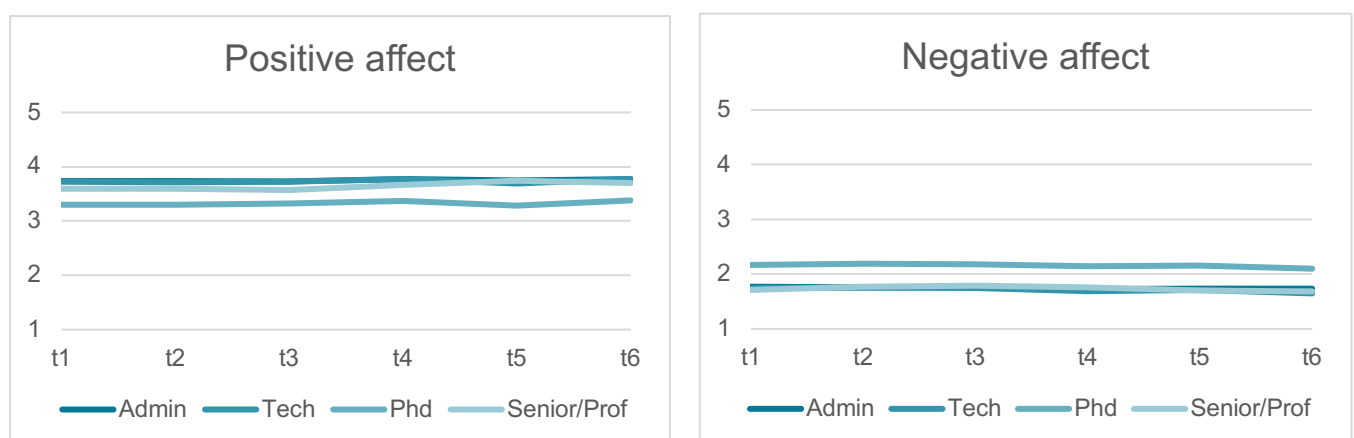
## 3.1 Well-being

*Positive affect* was high throughout all survey waves, with mean values ranging from 3.3 to 3.8 (on a 5-point scale) for the different groups. There were only minor fluctuations over the six survey waves, but doctoral students and postdoctoral researchers had consistently lower mean values than the other occupational groups.

*Negative affect* was significantly lower, with mean values ranging from 1.7 to 2.2 (on a 5-point scale), and a slight decrease over the six survey waves. Doctoral students and postdoctoral researchers (see category PhD) had the highest mean values overall. Also, employees without supervisory responsibilities expressed slightly higher negative affect compared to supervisors, respectively.

Moreover, it should be noted that apart from the mean values reported here, there were rather large individual differences (standard deviations ranged from .7 to .8), indicating that some employees made particularly positive or negative experiences (see also responses from open text questions summarized in Chapter 4).

**Figures 1a to 1b. Positive affect and negative affect**



## 3.2 Collaboration, Conflict, Trust, and Social Isolation

Collaboration in teams within ETH as well as with collaborators outside worked well overall. The fact that people had established virtual collaboration practices already during the first lockdown in Spring 2020, may have contributed to this result.

Overall, *social support* was perceived as high over the six survey waves, with mean values ranging from 3.5 to 4 (on a 5-point scale). Employees felt to be most strongly supported by their coworkers. Support by ETH slightly increased over the weeks. However, standard deviations of 1 and higher also indicate large individual differences. Of the employee groups, doctoral students and postdoctoral researchers felt the least supported by coworkers, supervisors, and ETH.

Experienced *task conflict* was generally low, with mean values around 2.1 (on a 5-point scale) across all six surveys and employee groups. Experienced *relational conflict* was overall also rated low with a mean of 2.1 (on a 5-point scale) and was the lowest for doctoral students and postdoctoral researchers. Again, standard deviations of 1 and higher point to large individual differences.

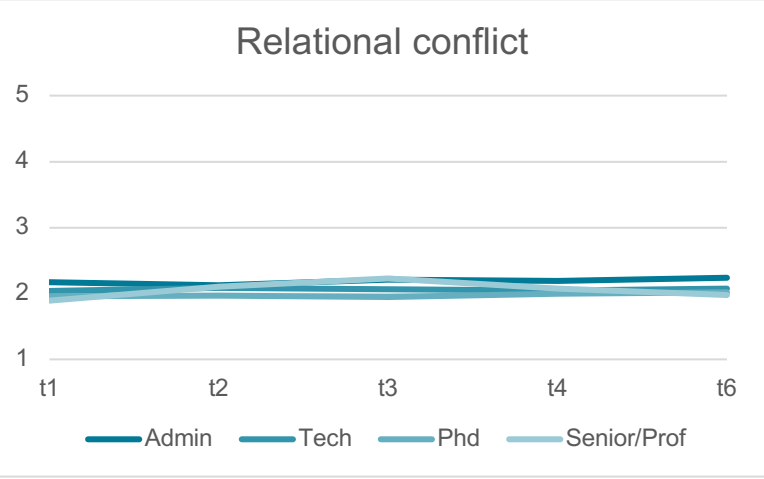
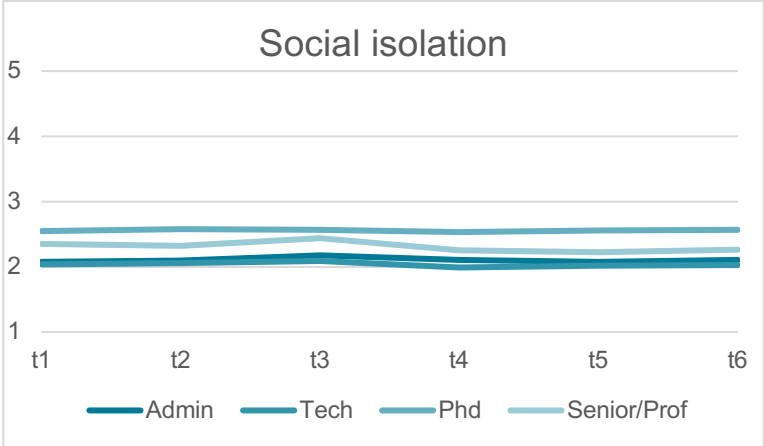
*Knowledge sharing* was generally high with mean values between 3.0 and 3.7 (on a 5-point scale) across all survey weeks and employee groups. Senior researchers and professors reported the highest values for knowledge sharing. *Knowledge receiving* was also generally high with mean values between 3.1 and 3.4 (on a 5-point scale) with little fluctuation except for senior researchers and professors who reported a slight increase over the weeks.

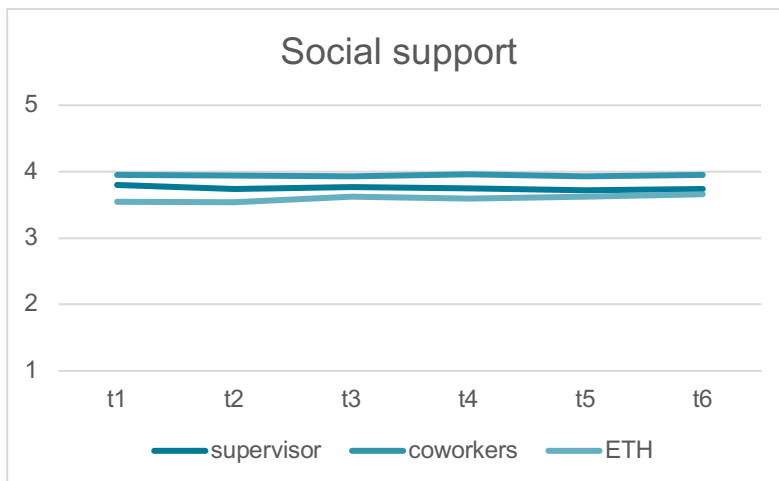
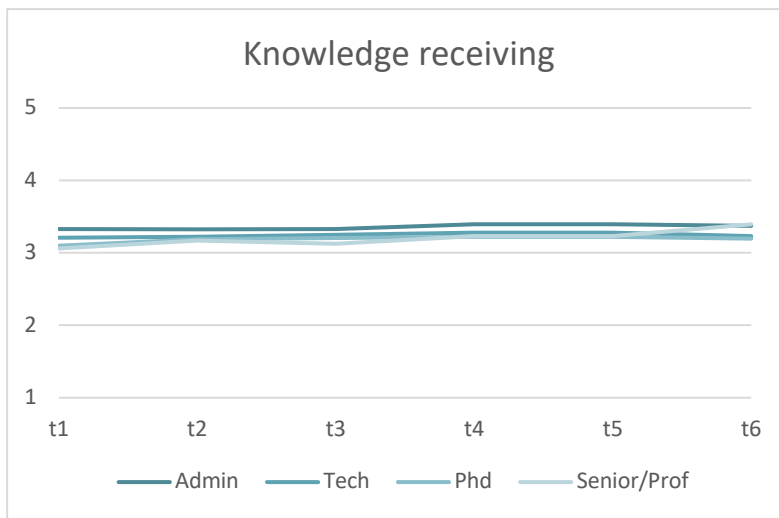
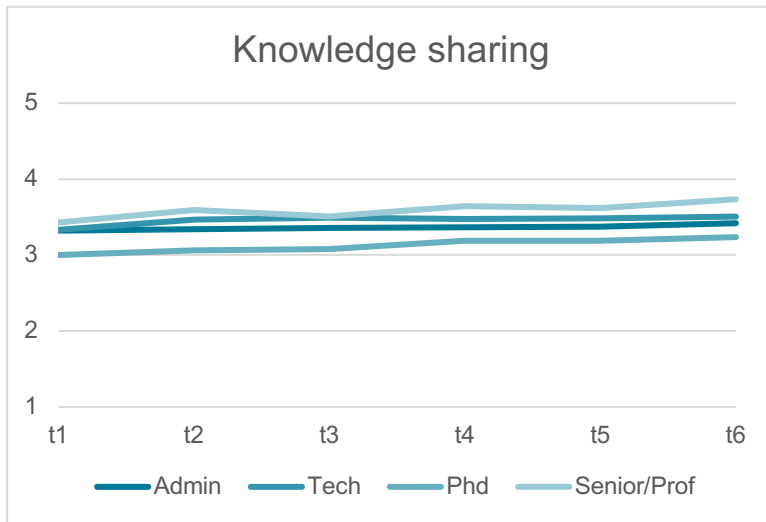
*Trust* in employees to get their work done effectively as perceived by supervisors was generally high with mean values ranging from 3.9 to 4.3 (on a 5-point scale). The *perceived performance* of employees by their supervisors was also generally high with mean values ranging from 3.8 bis 4.2 (on a 5-point scale).

*Social isolation* was reported as low (from 2.0 to 2.5 on a 5-point scale). Technical support employees reported the lowest values for social isolation throughout (possibly because many were required to work on site), and doctoral students / postdoctoral researchers reported the highest values for social isolation. Men and women reported equal levels of social isolation. The reported levels of social isolation remained relatively stable throughout all six survey waves.



**Figures 2a to 2f. Social isolation, task conflict, relational conflict, knowledge sharing, knowledge receiving, and social support**





### 3.3 Work engagement, job satisfaction, and work characteristics

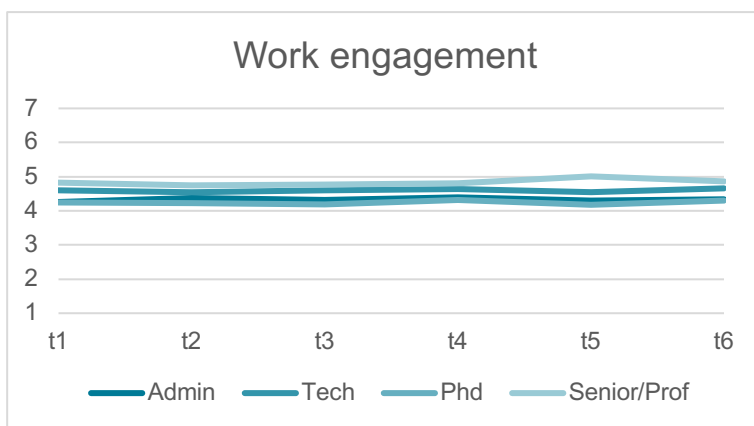
*Work engagement* was high across all groups and slightly increased over time with values between 4.2 and 5.0 (on a 7-point scale). Professors and senior scientists expressed generally higher work engagement than other employment groups.

*Job satisfaction* was high across all survey waves and employee groups with little fluctuation. Mean values ranged from 7.3 to 8.6 (on a 10-point scale). Doctoral students and postdoctoral researchers were least satisfied with their job.

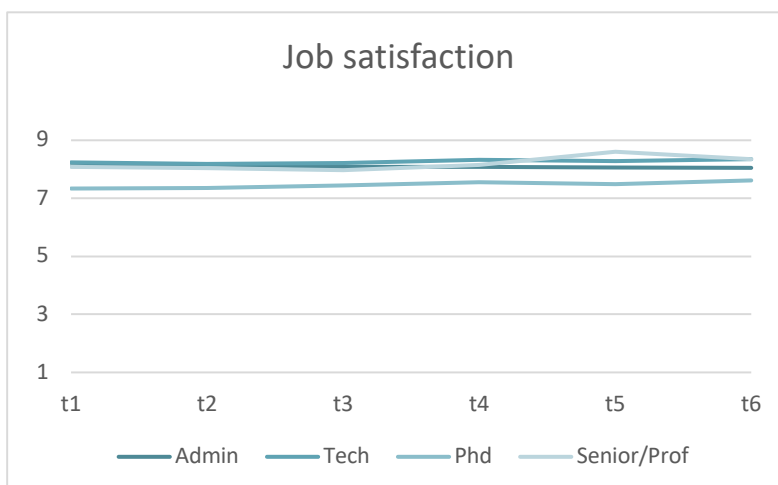
Perceived *job autonomy* was high with an average of 4.1 (on a 5-point scale) across all groups. It slightly decreased over the course of the six survey waves.

Apart from the perceived job autonomy, we also assessed the need for autonomy as well as the need for relatedness. The *need for autonomy* represents the desire to have the freedom to make decisions and express own ideas, while the *need for relatedness* is a basic human need for positive and pleasant social contacts within the context of desired relationships with people other than strangers. Fulfillment of these basic human needs is positively related to motivation and wellbeing. Both need for relatedness and need for autonomy were generally high across employee groups (with mean values ranging from 3.8 to 4.2 (on a 5-point scale) for need for autonomy and slightly lower with regard to the need for belonging (3.0 to 3.5 on a 5-point scale). These values were relatively stable over the six survey waves.

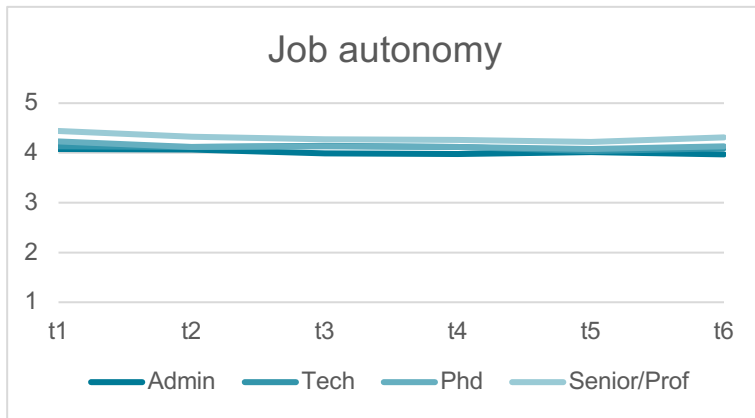
**Figures 3. Work engagement and job autonomy**



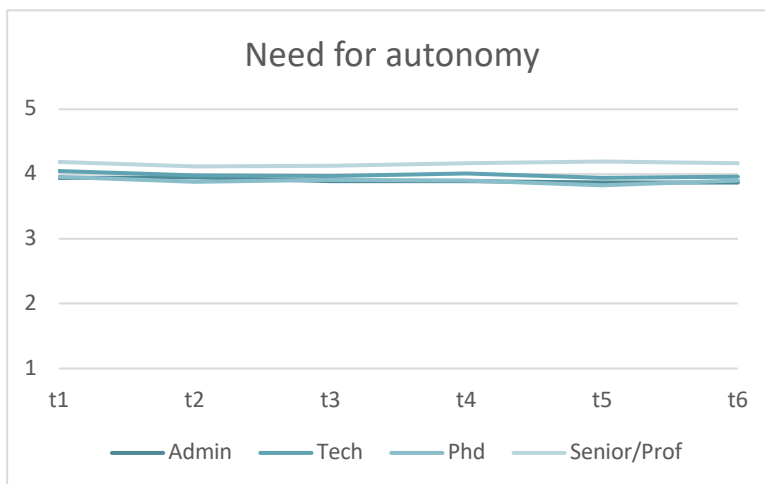
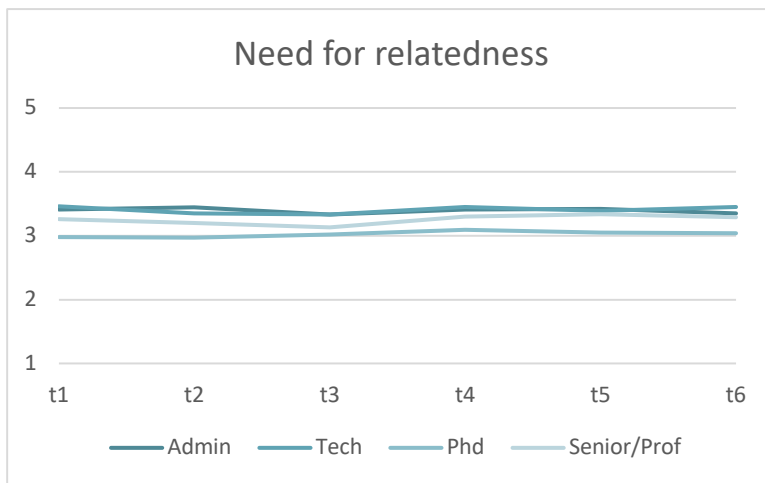
**Figure 4. Job satisfaction**



**Figures 5. Job autonomy**



**Figures 6a and 6b. Need for relatedness and need for autonomy**



## 3.4 Impact of personal dispositions and general working conditions on the remote working experience

We also examined the influence of three personal dispositions—learning goal orientation, team preference, and general self-efficacy—on all study variables.

A personal learning goal orientation implies that individuals like to be challenged by new tasks and appreciate opportunities to develop new abilities and skills. We found that ETH employees with a high learning goal orientation reported more work engagement, but also more social isolation, although this association varied between different time points and may be attributable to other (time-sensitive) factors.

ETH employees who indicated that they preferred to work in teams reported lower job satisfaction and more social isolation.

Self-efficacy refers to an individual's belief in his or her ability to successfully reach a goal or complete a task. Employees with stronger self-efficacy reported more work engagement and higher job satisfaction. They also felt less socially isolated and experienced more positive emotions as well as less negative emotions compared to employees with low self-efficacy.

We also examined two essential working conditions: job autonomy and task interdependence. Job autonomy was generally related to more work engagement, less social isolation, more positive emotions and less negative emotions, less task conflicts, and higher work satisfaction. Task interdependence was positively related to knowledge transfer but showed inconsistent relationships with other variables.

Overall, employees that worked more independently and were able to make decisions themselves seem to have dealt better with the remote working situation. Employees with higher levels of self-efficiency seem to have made more positive experiences in general and were less lonely while working from home. However, employees who prefer to work in teams were less satisfied with their jobs and felt more isolated during the second lockdown.

# 4 Issues Raised in Open Questions

Each survey contained two open questions concerning general positive and negative experiences participants had made during the past two weeks. Furthermore, at the end of the last survey (t6), participants were invited to reflect upon all the positive and negative experiences they had made over the course of the “1-year COVID-19 pandemic”. Participation in these open questions was extensive and insightful. Data analyses is still ongoing but, in the following, we provide a short overview of the most frequent categories found in this rich qualitative data set.

## 4.1 Positive experiences

Positive experiences were most frequently related to the following topics: increased performance and efficiency gains; positive collaboration experiences inside and outside of ETH; and increased flexibility

in terms of place and time of work including reductions in commute time and improved work-family integration. In the following, we provide a few examples of responses for each category.

## Increased performance and efficiency gains

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- I am doing very well in the home office and can work much more concentrated and error-free than before.
- Scientific writing is x-times faster at home without distractions. The first lockdown was therefore still perceived as a "blessing", since the dissertation could be completed without great stress.
- I can definitely work better on tasks that need concentration since there is virtually no "disturbing" factors in home office.
- Working from home can be more productive for me personally. There is less distraction when I need to focus on a specific task, where I do not need much input from other people.

## Positive collaboration experiences inside ETH Zürich

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- Remote collaboration is very good, the pandemic has taught me that. For over a year now, we have been working together as a group/section almost exclusively remotely and it works very well!
- The exchange with colleagues has also improved - instead of passively waiting for an opportunity to exchange (or interrupting and thus actually being annoying), we have planned and perceived exchanges much more consciously. It has also become a matter of course to pick up the phone and ask directly instead of waiting for meetings or personal opportunities - I will definitely keep this up.
- I also feel that it has become easier to find an appointment with several people. There were more free slots in the agenda of my work colleagues. I will definitely schedule some meetings as online meetings in the future. The inhibition threshold to ask someone for a 30-minute online meeting is lower than in comparison to asking someone for a 30-minute face-to-face meeting.
- My supervisor, my coworker and I have daily video conferences which helped immensely to feel that we are still a team which is great.

## Positive collaboration experiences outside ETH Zürich

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- More communication with external scientists by zoom - saves CO2, time and travelling money. It doesn't replace face-to-face meetings but should be used alongside.
- Now I more often work with "colleagues" at other institutions or in other organizations, where the theme of the work more closely overlaps, but with whom physical distance was previously an impediment. Because of this, some projects and activities have become easier than ever to coordinate or execute, which has led to a relative increase in productivity.
- Also, I would say I have greater reach with my projects - both with the collaborators who come on board despite physical distances and the audience that can be reached in the online setting. This means I have been able to expand my network and engage in more impactful projects.

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- Hybrid work is also better for international exchange/collaboration in the future.

## Increased flexibility

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- I have a better balance between work and family organization, less stress that reflect on my kids who feel more relax. It is easier to read a story before going to the Krippe when I know it takes me then 15 min to be on my computer than when I know that I will need 40 min to reach my working place.
- Saved (commuting) time can be invested for personal and professional development (have taken several online courses and started studying).
- I am a lot less stressed. My health is also better. Family and career are more compatible.
- I also feel much better physically and mentally in the home office, since the stress of commuting is gone, and I can take a walk over lunch. In general, my life has relaxed a lot in the last year.

## 4.2 Negative experiences

Negative experiences touched on issues such as overwork and stress, social isolation, and lack of supervisor support. Interestingly, many issues that were central during the first study (e.g., technical, and organizational problems with working from home; self-management regarding work motivation; or dissatisfaction with ETH-wide regulations and communication) were no longer seen as problematic. This may reflect the fact that people were able to overcome the initial hassles of setting up remote work practices and that they had gotten used to the new ways of working together. Also, contrary to the Spring 2020 survey during which schools and daycare facilities were closed due to the nationwide lockdown in Switzerland, the particularly high challenges for families with children (e.g., inadequate work conditions at home; managing boundaries between work and non-work) were lifted and thus no longer reported as problematic. Again, we provide some examples of responses related to the different topics to allow for a first-hand impression.

### Overwork and stress

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- On average I've probably worked about 125% this year. A lot of that was getting our covid project going, moving our institute online, and ensuring that junior staff are okay, so I'm happy to have done it.
- In the last 12 months, it has become relentlessly clear that the resources in my area are not sufficient. When you are constantly working under full load, there are no reserves for exceptional situations. The last 12 months have been hell in terms of work.
- The inflationary number of video calls is very annoying. Everyone has the feeling that they have to set up a VC for every request. That absolutely has to be regulated.
- I prefer the remote work option, but I have never worked more hours in my life (way beyond 100% despite my part-time contract).

### Social isolation

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- I do not feel strongly as part of the group anymore, only for a little subgroup that I actually work with.

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- I felt a little left out. People forget about you when you're not present.
  - I also saw how quickly such isolation can drive people mad - even the ones who were happy to escape the pandemic by staying at home: if you are alone at home, your thoughts turn around the same issues all the time and drive you mad.
  - I worry about our younger team members; this is a lot of isolation and uncertainty.

## Lack of supervisor support

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- The importance of leadership and how quickly one notices when a strong and talented leader is lacking at the head of a team. My direct supervisor has been quite out of touch generally since even before the start of the pandemic, and I have not felt a strong sense of leadership coming from him (a professor). At the beginning we as a team made efforts to maintain a sense of unity and community, but without someone to lead this and keep up the efforts, after a few weeks, we all became quite isolated in our own little bubbles. I feel doubtful that a team spirit can be easily rebuilt when we are finally allowed to work together in person again. I realize I could take initiative myself to try to lead the team "laterally", but the times I have made the effort, I felt little positive feedback, either from the team or from my supervisor, so afterwards I have had even less motivation to continue those efforts in the future (nor does my salary compensate me for taking on a leadership or management role).
- The already inadequate support from the supervisors worsened.
- My supervisor micromanages me, has low leadership skills and is constantly overworked. We don't get along well. I can handle it better in the home office than on site (we sit in the same office).
- My PI has a strong tendency of assuming people are unproductive when he does not see them working (even if they are on site and he "catches" them having a short break).

# 5 Summary of Responses Regarding Future Work Arrangements

The last survey (t6) included two additional open-ended questions. The first invited participants to reflect on their personal experiences made during "1-year of the COVID-19 pandemic". Based on these reflections, the second question invited participants to formulate their wishes for "The future of work post the COVID-19 pandemic". Furthermore, we also asked participants more directly, how many days per week they wish to work remotely versus on site and to specify the reasons for their preference.

The following three findings stood out:



- I Overall, participants draw positive conclusions about their work-related experiences made during “1 year of the COVID-19 pandemic”. Most people saw an opportunity in questioning old habits and learning new work and collaboration practices.
- II Most people wish to spend two days working remotely. This result is consistent across professional groups, people with or without a leadership position, and gender.
- III The opportunity for (informal) social exchange and good leadership are seen as central to successful new (hybrid) work practices.

## Personal Reflections on “1-year of the COVID-19 pandemic”

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- I really didn't think at first that I would be so calm, productive, and content when working from home. I feel healthier and more balanced since I work at home because I eat healthier, exercise more and am fitter in the evening. I also work more productively at home than in the office because there are many distractions in the office (colleagues who want to have private conversations, noise in the office, etc.). The commuting time that you no longer have brings more quality to your life and I appreciate that a lot!
- I have learned how to efficiently structure online meetings to get the most out of it. I have also learned what a waste of time some in-person meetings were before the pandemic hit.
- I have learned a lot from remote working and teaching: how to organize myself; how to communicate with other persons; how to keep working schedule; and etc.
- Looking back, my work routine pre-pandemic was very rigid. I now realize that I can be equally productive with a more flexible work routine.

## Wishes for the future of work: Maintain place/time flexibility

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- I strongly wish my professor will allow us to be more flexible regarding home office and working hours after the pandemic.
- I would like to be able to decide very spontaneously, even early in the morning, where I work today - depending on the situation, this can be 3 days HO and 2 days office. If new projects start or new employees have to be trained, I would of course adapt this: more office - 1 day office, where the whole team is on site, that's all it takes. Keep Zoom where it makes sense - Hopefully also for courses and congresses.
- In the future, I would like to work 2-3 days a week from home. Being at the office gives me some structure and when I leave, work is over, that is nice. Some tasks, where I need to concentrate and focus for a few hours, however, I prefer to do them at home.
- In the future, I wish to preserve the option to work from home and have hybrid meetings/conferences to let those who cannot make it in person to participate in real time.

## Wishes for the future of work: Foster (informal) social exchange inside/outside ETH Zurich

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- I learned that informal interactions with coworkers are very important, particularly for newbies like me.
- Many educational / academic information exchanges really need some human interaction. Another thing I learned was that there are very useful tools for keeping in touch with people without actually seeing them. So, it depends.
- Formal exchanges can be conducted online and virtually without any problems. The informal exchange, however, does not work that well and it may need some personal interactions on site.
- I learnt about the "good and bad" sides of Zoom meetings. They cannot replace personal interactions but can sometimes be very useful. I learnt how social most humans are.

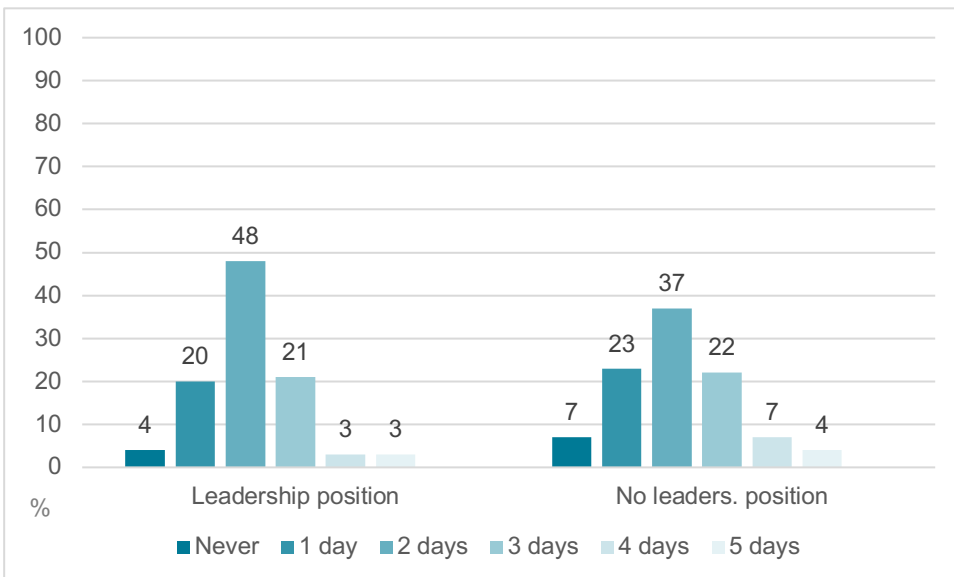
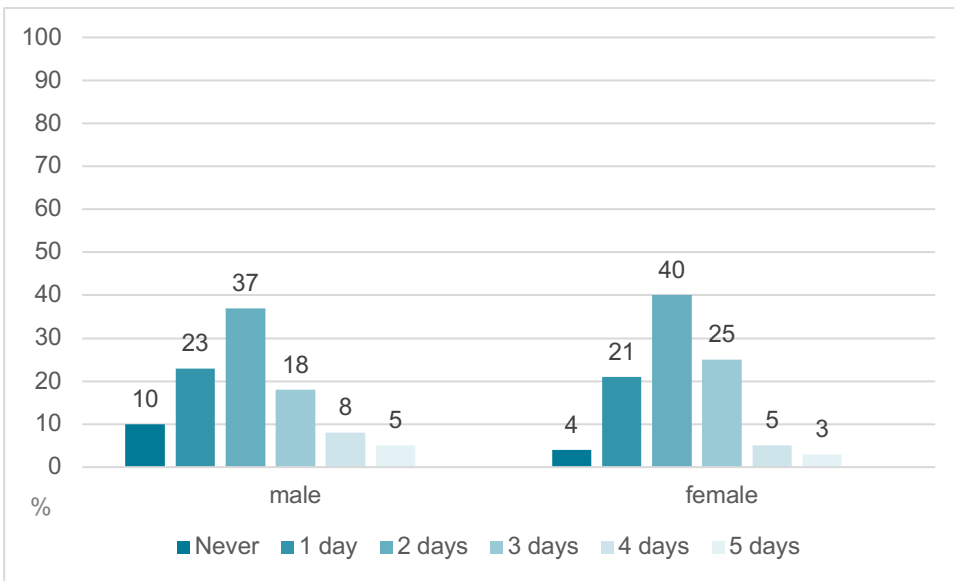
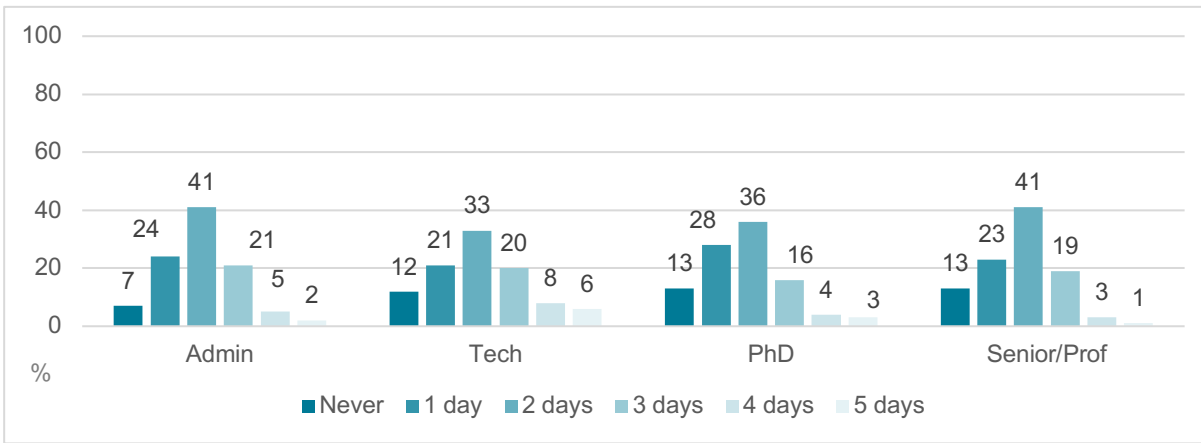
## Wishes for the future of work: Leadership is more important than ever

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- I am a professor - we initiated group seminars more regularly than before Covid. During home-office, I have a scheduled weekly meeting with each member of my group, whereas before we spoke regularly, but only at unscheduled times. Especially as my group grows, I find that the new approach works well.
- As a leader, keeping a team together or welcoming new member has posed challenges which can be better solved with open and clear communication. This helps in the future too.
- I have become more independent, and I believe my supervisor has noticed and helped me reaching this.
- My supervisor micromanages me, has low leadership skills and is constantly overworked. We don't get along well. I can handle it better in the home office than on site (we sit in the same office).

We also asked about people's preferences of working from home versus on site. As depicted in the following graphs, in all four groups of employees, the most preferred work pattern is two days a week working remotely. We also asked for *benefits* of working remotely and working on site respectively. 16% of participants regarded the opportunity to save on commute time as a benefit of working remotely, 14% benefitted from increased flexibility between work and private life, 13% reported having fewer distractions when working remotely and 13% named increased flexibility of working hours as a benefit. The benefits of working on site were the personal interactions (19%), the access to facilities (11%) and clearer boundaries when working on site (10%).

**Figures 4a to 4c. Preferred number of home office days for different employee groups**



# 6 Overall Comparison Study 1 (Spring 2020) and Study 2 (Winter 2020/21)

To our surprise, mean values stayed relatively stable over time also when comparing the overall results from Study 2 (Winter 2020/21) with Study 1 (Spring 2020). For instance, the mean values for positive affect ranged from 3.3-3.8 and negative affect from 1.7-2.3 in both studies (identical range of values over time). Work engagement ranged between 4.1-4.8 in Study 1 and between 4.2-5 in Study 2, showing a slight increase. Social isolation ranged from 2.1-2.7 in Study 1 and between 2.0-2.5 in Study 2, indicating a slight decrease. The only significant difference we found was with regard to the preferred home office days. Although overall, two days were the preferred option across all professional groups and regardless of leadership position in both studies, in Study 1 there was a significant difference in that women preferred 1.5 days and men 2 days of remote working.

When looking at the open text answers, however, some qualitative differences in experiences between the first nationwide lockdown in Spring 2020 (Study 1) and the Winter 2020/21 (Study 2) became apparent. Many people reflected on their experiences of “1-year Covid-19” and how their preferences changed over time. Many people who had had trouble working remotely (e.g., due to self-management issues or the setting of clear boundaries between work and home), reported to have grown to appreciate the benefits of increased flexibility over time. This trajectory was particularly poignant in statements coming from employees with young children, who back in Spring 2020 had been required to juggle work whilst home-schooling their children (due to the nationwide closure of schools in Switzerland). Many others reported that their initial reservations regarding virtual collaboration had vanished after they had made positive experiences when using virtual communication tools such as Zoom, and that also informal communication was enabled digitally for instance through virtual coffee meetings or social media platforms such as Slack. There were, however, some employees who experienced no change in their preferences and who were either counting the days until they could go back to the office, or those who hoped they could continue working remotely long-term. Lastly, various respondents reflected on their experiences over the past year and said that it had changed their values and priorities in life in more fundamental ways, for instance by having reported extreme levels of stress and overwork during the first study and paying more attention to their personal health and wellbeing now.

## 7 Recommendations

In summary, there are five key messages that can be derived from our findings:

- There is a continued general desire for the possibility to maintain flexibility regarding workplace and time also after restrictions are suspended. With regards to long-term future work practices after the Covid-19 pandemic, most people wish to work remotely for (at least) two days per week.

- Overall, participants benefited from increased performance and efficiency gains (better concentration, less distraction, more autonomy, more flexibility, gaining time from lack of commute) and draw positive conclusions of their work-related experiences made during “1 year of the Covid-19 pandemic”.
- Virtual collaboration with partners within as well as outside of ETH Zürich worked well (sometimes better than before), but the importance of informal social exchange was stressed.
- Overall, work-engagement, job satisfaction, and positive affect were high, whereas conflict, negative affect, and social isolation were reported as low. However, large interindividual differences underline the importance of continued support offers and individual considerations within each work group or leader-member-dyad.
- Supervisors had high trust in their employees and rated their performance as high. However, ineffective and/or mistrustful leadership was seen by many employees as one of the biggest challenges.

In addition to the guiding principles proposed in last year’s report, we propose the following recommendations for the ETH Executive Board to consider. We structure these into four themes—Culture, Leadership, Structure, and Technology:

**Culture:**

- Establish recommendations regarding flexible working practices (i.e., a mix between remote and on-site working and collaborating) that serves as a guide and is in line with the overall values and culture of ETH Zürich.
- In each work group, openly discuss the group’s values and culture, individual needs, and requirements.
- What are important cultural artifacts, symbols, or rituals that create team cohesion and a sense of belonging to the group as well as to ETH Zürich overall. Once identified, cultivate and foster these and make sure nobody is excluded.

**Leadership:**

- Build on trust rather than control – focus on outcomes
- Do not generalize, find individual solutions and arrangements focusing on the most effective leader-member-exchange depending on the type of work, need for autonomy, and personal living conditions.
- As a leader, pay attention to potential discrimination and biases and do not lose sight of those you cannot see (in person). Unconscious bias trainings and/or awareness campaigns may help.

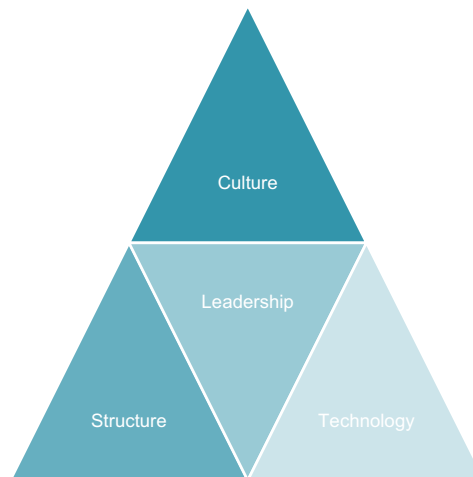
**Structure:**

- Well-designed jobs and work processes improve motivation. Define how much autonomy, task interdependence, and feedback are most conducive to a certain task or job.
- Which meetings benefit from face-to-face interactions (e.g., complex problem solving and decision-making, innovative brainstorming), and which meetings are more efficient in a remote format?
- How can informal social interactions naturally be fostered when people work on-site but also via social communication channels remotely (e.g., Slack)

**Technology:**

- Hybrid team interaction (e.g., via Zoom/Teams) is much more challenging than interacting fully remotely. Choose appropriate technology and practices to avoid communication deficits.
- Match the required richness of communication with the appropriate communication channel. Not every meeting / conversation requires a video chat (e.g., use of telephone) and may be more effective in an asynchronous format (e.g., Email, Slack etc.).
- When creating hybrid work solutions, avoid “workplace transfer costs” by enabling two fully functioning workplaces (regarding software and hardware solutions).

**Figure 5. Four considerations for successfully implementing hybrid place/time-flexible work models**



Lastly, a word of caution: The results presented in this report provide a broad overview of employees' perception of their work situation during the Winter period of the second COVID-19 wave in Switzerland from December to March 2021. It is possible that some employees who chose not to participate in this study hold very different views. It is important, therefore, to offer an open and inclusive dialogue with all employees and at all levels of the ETH Zürich. The future development of the Covid-19 pandemic is likely to determine our lives for quite a while longer and the establishment of new (hybrid) work practices will have long-lasting effects. The continuation of careful monitoring of productive and healthy remote working practices to foster well-being and satisfaction of all members of ETH Zürich remains key.

# 8 Appendix

## 8.1 Glossary

<b>Construct</b>	<b>Definition</b>
<b>Virtual Meeting</b>	Interactions via communication tools (e.g., telephone, email, Skype, Zoom).
<b>Face to Face Meeting</b>	Direct interactions in the same physical location.
<b>Positive Affect</b>	Reflects the extent to which a person feels enthusiastic, active, and alert. High PA is a state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterized by sadness and lethargy.
<b>Negative Affect</b>	Is a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, disgust, guilt, fear, and nervousness, with low negative affect being a state of calmness and serenity.
<b>Task conflict</b>	Refers to disagreements about the work to be done, the cause tends to be attributed to situational factors (e.g., differences of opinion or ideas about the correct way to approach a task).
<b>Relational Conflict</b>	Refers to interpersonal disagreements regarding personal issues. It is attributed to factors associated with the conflict partner or the relationship between the partners.
<b>Support by coworkers and supervisors</b>	Perceived feeling of support from the supervisor or from the coworkers in a team.
<b>Collaboration</b>	Type of collaboration and degree of involvement, e.g., how often someone collaborates in our outside of ETH for one week.
<b>Work engagement</b>	Is a positive work-related state of fulfillment that is characterized by vigor, dedication, and absorption.
<b>Job Autonomy</b>	Is an individual's ability to influence what happens in his or her work environment, in particular to influence matters that are relevant to his or her personal goals.

<b>Learning Goal Orientation</b>	An individual disposition toward developing or validating one's ability in achievement settings.
<b>Team Preference</b>	An individual preference to work in a team or to work alone.
<b>Task Interdependence</b>	<p>Is considered to be a structural feature of the instrumental relations that exist between team members.</p> <p>Team members are task interdependent when they must share materials, information, or expertise in order to achieve the desired performance.</p>
<b>Self-Efficacy</b>	Refers to the assessment of one's own competence to successfully perform actions.
<b>Knowledge sharing and knowledge receiving</b>	Means the exchange of information from one team member to another.
<b>Trust</b>	Is a generalized predisposition or personality trait that develops in varying degrees depending on a person's personal experience with significant others, particularly during their early socialization.
<b>Need for autonomy</b>	Is the desire to have the freedom to make decisions and express own ideas. Fulfillment of this basic need is positively related to motivation and wellbeing.
<b>Need for relatedness</b>	Is the basic human need for positive and pleasant social contacts within the context of desired relationships with people other than strangers. Fulfillment of this basic need is positively related to motivation and wellbeing.



## 8.2 Survey (T0)

Dear colleagues of ETH Zürich

Thank you for participating in this survey on our joint experience of managing new forms of working together. This survey is a continuation of the study completed in Spring 2020.

The goal of this survey is to identify hindering and facilitating conditions (scientific publication) and to develop recommendations for all of us on how to best work together, now and in the future.

For those of you who have **already participated in the Spring**, today's survey will last about **3 minutes**.

For those of you who **join for the first time**, the survey will last about **4-6 minutes**.

Please complete this survey **by December 24th, 2020**. Between January and the end of March 2021, you will be invited to participate in 6 short surveys (about 10 minutes) to reflect on your experiences of the previous 2 weeks.

You will be given a random code and responses will be analyzed in an **anonymous** form. Only the project team members have access to the data (no third parties). All data will be consolidated and saved on the password-protected server at the Chair of Work and Organizational Psychology; D-MTEC.

Your participation in the study is voluntary. You can withdraw from the study at any time without indicating any reason.

**Thank you very much for participating in this important study so we can learn how to best master the challenges we are currently facing.**

Julian Pfrombeck, Nadine Bienefeld, Luisa Koller, and Gudela Grote  
Department of Management, Technology, and Economics  
Chair of Work and Organizational Psychology

This study has been approved by the ETH ethics committee in an expedited procedure.

Data will be analyzed in an **anonymous** form by the research team at the Chair of Work and Organizational Psychology.

No third parties will get access to the data.

Your participation in the study is **voluntary**. You can withdraw from the study at any time and for any reason.

## 8.2.1 Socio-demographic data

Question	Response scale
Q1 Gender	1 = male, 2 = female, 3 = other
Q2 Age (in years):	
Q3 Place of residence:	
Q4 Your unit at ETHZ:	
Q5 Your function at ETHZ:	
Q6 Percentage of employment at ETHZ:	
Q7 Type of employment:	1 = fix-term contract, 2 = permanent contract
Q8 Are you in a leadership position (1 or more people directly reporting to you)?	1 = yes, 2 = no
Q9 Do you have children living in the same household?	1 = yes, 2 = no
Q10 If you have children living in the same household, please indicate their ages:	
Q11 Are there other persons that require care in the household?	1 = yes, 2 = no
Q12 If you receive external help for care work of children, elderly or disabled people, please indicate how many hours per week:	

## 8.2.2 Work patterns, virtual collaboration, and travel activities before the COVID-19 outbreak

In this part, we ask you to identify your work patterns, virtual collaboration, and travel activities **before** the COVID-19 outbreak. Please answer the following questions relating to a typical week in 2019 (if you have joined ETHZ in 2020, please think of a typical week before the lockdown).

Question	Response scale
Q13 During a <b>typical week in 2019</b> , which percentage have you worked:	1 = remotely, 2 = onsite
Q14 During a <b>typical week in 2019</b> , how many work-related interactions did you have?	1 = virtually with members of your team at ETHZ, 2 = face-to-face with members of your team at ETHZ, 3 = virtually with your supervisor, 4 = face to face with your supervisor, 5 = virtually with collaborators outside of your team, 6 = face to face with collaborators outside of your team

Q15 Overall, of all the people you collaborate with, where are they located:	1 = at ETHZ (%), 2 = in Switzerland other than ETHZ (%), 3 = in other countries (%)
Q16 Please rank the following communication tools (drag and drop) to indicate how often you have used them in your interactions during a <b>typical week in 2019</b> (1 = most often; 5 = least often / never):	1 = email, 2 = collaboration platforms (e.g., Slack), 3 = video enabled (e.g., Skype, Zoom), 4 = without video (e.g., telephone), 5 = social media
Q17 During a <b>typical week in 2019</b> , how many hours (in sum) did you spend commuting to and from work?	
Q18 In the <b>entire year 2019</b> , how many days approximately did you spend abroad for work?	
Q19 If you have a teaching position, how much of your teaching in the <b>entire year 2019</b> (in %) was online:	

### 8.2.3 Working conditions and preferences in general

To identify your working conditions and preferences in general, please select to what extent you agree with the following statements:

Question	Response scale
Q20 In general... ... I prefer to work as part of a team. ... I find that working as a member of a team increases my ability to perform effectively.	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree
Q21 If you had a choice, how many days per week would you generally want to work from home?	1 = never, 2 = 1 day a week, 3 = 2 days a week, 4 = 3 days a week, 5 = 4 days a week, 6 = 5 days a week
Q22 In general... ... I have a one-person job; I rarely have to check or work with others. ... I have to work closely with my colleagues to do my work properly. ... in order to complete our work, my colleagues and I have to frequently exchange information and advice.	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree
Q24 In general... ... I am willing to select a challenging work assignment that I can learn a lot from. ... I often look for opportunities to develop new skills and knowledge. ... I enjoy challenging and difficult tasks at work where I'll learn new skills. ... for me, development of my work ability is important enough to take risks.	

... I prefer to work in situations that require a high level of ability and talent.	
Q25 In general... ... I can rely on my own abilities in difficult situations. ... I am able to solve most problems on my own. ... I can usually solve even challenging and complex tasks well.	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree
Q26 In general... ... there is a very high level of trust throughout ETHZ. ... at ETHZ, subordinates have a great deal of trust for managers. ... supervisors at ETHZ trust their subordinates to make good decisions.	1 = doesn't apply at all, 2 = applies a bit, 3 = applies somewhat, 4 = applies mostly, 5 = applies completely
	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree

## 8.3 Fortnightly Survey (T1-T6)

Question	Response scale
Q31 Over the last two weeks, how much of your work (in %) did you perform at home or onsite at ETHZ?	1 = at home, 2 = onsite at ETHZ, 3 = other
Q34b During the last two weeks, how often did you communicate ... ... virtually with members of your team? ... virtually with your supervisor?  ... face-to-face with members of your team? ... face-to-face with your supervisor?	1 = never, 2 = once a week, 3 = a few times per week, 4 = multiple times per day, 5 = continuously throughout the day
Q35 In your virtual communications during the last two weeks, how often did you use the following tools? email chat on collaboration platforms (e.g., Slack) video enabled (e.g., Skype, Zoom) without video (e.g., telephone)	1 = never, 2 = a few times per week, 3 = multiple times per day, 4 = continuously throughout the day
Q57 During the last two weeks ... ... my job allowed me to plan how I do my work.	1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree

<p>... my job provided me with significant autonomy in making decisions.</p> <p>... my job gave me considerable opportunity for independence and freedom in how I do the work.</p>	
<p>Q58</p> <p>During the last two weeks, how satisfied were you with the following aspects of your work?</p> <p>The positive social interactions I had at work with other people.</p> <p>The feeling of being part of a group at work.</p> <p>The opportunities at work to talk with people about things that really matter to you.</p> <p>The degree of freedom I had to do my job the way I think it can be done best.</p> <p>The opportunities to take personal initiatives in my work.</p> <p>The opportunities to exercise my own judgment and my own actions.</p>	<p>1=very dissatisfied, 2=dissatisfied, 3=neutral, 4=satisfied, 5=very satisfied</p>
<p>Q100 During the past two weeks, ...</p> <p>... I showed my coworkers special procedures so that they could learn them.</p> <p>... I supported the efforts of my coworkers to gain knowledge.</p> <p>... I enabled my coworkers to learn a lot by explaining something on the job.</p>	<p>1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree</p>
<p>Q101 During the past two weeks,...</p> <p>... I turned to my coworkers for advice regarding special procedures so that I learned them.</p> <p>... I invested effort into gaining knowledge from my coworkers.</p> <p>... I learned a lot by asking my coworkers.</p>	
<p>Q41 During the last two weeks...</p> <p>... I found the work that I do full of meaning and purpose.</p> <p>... I was enthusiastic about my job.</p> <p>... my job inspired me.</p> <p>... I was proud of the work that I do.</p>	<p>1 = never, 2 = almost never, 3 = rarely, 4 = sometimes, 5 = often, 6 = very often, 7 = always</p>
<p>Q43 During the last two weeks...</p> <p>... I experienced tensions with the people I work with.</p> <p>... I experienced emotional conflicts with the people I work with.</p> <p>... people I work with and I were divided about who should do what.</p> <p>... people I work with and I were divided about a decision.</p>	<p>1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree</p>

Q 102 During the past two weeks, how satisfied were you overall with your work?	1 (not at all satisfied), 2,3,4,5,6,7,8,9,10 (completely satisfied)
Q103 Over the last two weeks,... ... I felt left out on activities and meetings that could enhance my career. ... I missed out on opportunities to learn from others. ... I felt out of the loop. ... I missed the face-to-face contact with coworkers. ... I felt isolated. ... I missed informal interactions with others.	1 = never, 2 = sometimes, 3 = half of the time, 4 = most of the time, 5 = always
Q68 Based on your experience during the last 2 weeks, to what extent do you agree with the following statement:  I trusted my direct reports to get their work done effectively when working from home.	1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree
Q104 During the last 2 weeks, to what extent did you feel your subordinates were effectively fulfilling their roles and responsibilities?	1 = not effectively at all, 2 = not effectively, 3 = neither, 4 = effectively, 5 = very effectively
Q42 During the last two weeks, to what extent did you feel: upset excited inspired nervous determined attentive afraid active ashamed hostile	1 = never, 2 = almost never, 3 = rarely, 4 = sometimes, 5 = often, 6 = very often, 7 = always
Q30 During the last week, how well did you feel supported... ... by the ETHZ? ... by your supervisor? ... by your coworkers?	1 = no support, 2 = little support, 3 = moderate support, 4 = good support, 5 = excellent support, 6 = not applicable

Before ending the survey, you have the opportunity to share your experiences with remote work or virtual collaboration in the open text boxes below:

Question	Response scale
Was there an experience that was particularly inspiring/positive the past two weeks? Please describe it in a few sentences.	none
Was there an experience that was particularly challenging/negative the past two weeks? Please describe it in a few sentences.	none

## 8.4 Final Survey (T6)

### 8.4.1 Additional questions to the fortnightly questionnaire

The following questions relate to your preferences for remote work.

Question	Response scale
Q 3000 When you will have a choice again, how many days per week would you generally want to work remotely (from home or anywhere else other than your designated office/lab space at ETH Zürich)?	1 = never, 2 = 1 day a week, 3 = 2 days a week, 4 = 3 days a week, 5 = 4 days a week, 6 = 5 days a week, 7 = not applicable
Q 3001 What are the reasons for your preference regarding place of work?	1 = Being able to meet and interact with others face-to-face, 2 = Having clearer boundaries between work and home, 3 = Having access to the facilities (e.g., own office), 4 = Having fewer distractions, 5 = Saving on commute time, 6 = Increased flexibility between work and family / private, 7 = Increased flexibility in working hours, 8 = Other reasons
Q 3002 During this time, how much did you feel that your own health was threatened by the pandemic? During this time, how much did you feel threatened by the economic consequences of the pandemic?	1 = Not at all, 2 = a little, 3 = somewhat, 4 = strongly, 5 = very strongly

The following open questions are about your experience and learning during the pandemic.

Question	Response scale
During this time, did you experience any significant events (e.g., change of position, promotion, other major life events)?	none
If you think back to the start of the Covid-19 pandemic and the first lockdown in Switzerland (March 2020), what has changed for you professionally? What have you learned? What do you wish to preserve in the future?	none



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