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Work-from-home is here to stay: Call for flexibility in post-pandemic work policies☆

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ABSTRACT

In early 2020, the Covid-19 pandemic forced employees in tech companies worldwide to abruptly transition from working in offices to working from their homes. During two years of predominantly working from home, employees and managers alike formed expectations about what post-pandemic working life should look like. Many companies are experimenting with new work policies that balance employee- and manager expectations regarding where, when and how work should be done in the future. In this article, we gather experiences of the new trend of remote working based on the synthesis of 22 company-internal surveys of employee preferences for WFH, and 26 post-pandemic work policies from 17 companies and their sites, covering 12 countries in total. Our results are threefold. First, through the new work policies, all companies formally give employees more flexibility regarding working time and location. Second, there is a great variation in how much flexibility the companies are willing to yield to the employees. The paper details the different formulations that companies adopted to document the extent of permitted WFH, exceptions, relocation permits and the authorisation procedures. Third, we document a change in the psychological contract between employees and managers, where the option of working from home is converted from an exclusive perk that managers could choose to give to the few, to a core privilege that all employees feel they are entitled to. Finally, there are indications that as the companies learn and solicit feedback regarding the efficiency of the chosen strategies, we will see further developments and changes in the work policies concerning how much flexibility to work whenever and from wherever they grant. Through these findings, the paper contributes to a growing literature about the new trends emerging from the pandemic in tech companies and spells out practical implications onwards.

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1. Introduction

In March 2020, most tech companies in the world forced their employees to work from home in response to the COVID-19 pandemic, marking the turn of the history in the magnitude of experience and perception of work from home (WFH). Almost two years later, with the ease of restrictions and periodic attempts to reopen the society, we see that the pandemic has left a permanent mark in the fundamental principles of the workplace as many information workers express their preferences to continue working from home. It is, thus, fair to assume that WFH is here to stay.

A large survey of over 30'000 American workers identified five reasons for the large shift in favour of WFH (Barrero et al., 2021a), including better-than-expected WFH experiences, new investments in physical and human capital that enable WFH, the change in attitude and stigmatisation of remote workers, lingering concerns about crowds and contagion risks, and a pandemic-driven surge in technological innovations that support WFH. Similarly, an overview of the pandemic productivity of software engineers summarised by Smite et al. (2022) illustrates the positive experiences with remote working. And although we know that fully remote work from home was initially reported as not challenge free and not for everybody (Ford et al., 2021; Ralph et al., 2020), we have evidenced the rise of technological advances that support remote working as well as increased experimentation with practices that alleviate remote teamwork and working from home (Dent et al., 2021; Miller et al., 2021; Santos and Ralph,

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2022a; Smite et al., 2021). All that suggests that there is a growing realisation that the old, good days, in which the notion of "being employed" was strongly associated with working in the office, will change. An increasing demand for flexibility from the new hires during job interviews calls for new corporate policies regarding working from home. In fact, the degree of flexibility might now become the make-or-break point in many employment decisions. The following dialogues between developers (D) and managers (M) reflect the stories we have heard from our industry partners in the past few months, and they show that the rules for retaining and attracting employees are changing.

Somewhere in Sweden
M: Now it's time to return to the office.
D: No, we will continue working from home.
M: You must return.
D: OK, then we quit.
M: Please, don't. You can continue working from home.

Somewhere in Norway
D: May I work from home; I broke my leg.
M: Sorry, we just introduced a new policy. You are to be in the office 3 days a week.
D: But my situation is different!?
M: Sorry, but the rules are equal for everybody.
D (thinking): Oh, maybe I should start looking for a new job…

Somewhere in Germany
D: Since I am working from home during the pandemic, may I join my family in India and work from there?
M: OK, you are allowed to do that, but we will cut your salary to the level of the salary in India, since your living standard is going to be lower.
D: (thinking): Oh, maybe I should start looking for a new job…

Somewhere in Brazil
D: Can I get a raise?
M: Not really. It's a tough time now.
D: OK, then I quit.
M: Why? Aren't you satisfied with working for us?
D: I was, but then I got an offer from a start-up in the US that is ready to pay a much higher salary in US dollars.

On the other hand, there is a growing interest in understanding the long-term effects of isolation and remote work. A Microsoft study with over 60'000 employees shows that firm-wide remote work made the collaboration network more static with fewer new ties being established and heavily siloed, with fewer ties that cut across formal business units, as communication shifted from synchronous to asynchronous (Yang et al., 2021). Based on related research that suggests that changes in collaboration and communication media impede knowledge transfer and the ability to convey and process complex information, as well as reduce the quality, the authors further expect these network changes to have a negative impact on productivity and innovation (Yang et al., 2021). Other researchers have expressed similar concerns regarding the long-term effects of deteriorating social ties (Clear, 2021), decreased feeling of attachment and team cohesion (de Souza Santos and Ralph, 2022) and decreased interest in collaborative work when doing it remotely (Kane et al., 2021; Smite et al., 2021).

One key approach managers are using to tackle these problems is formulating new work policies that set the expectation for employees regarding office presence and behaviours in a new hybrid work situation. It is important to note that the existence of such policies is nothing new. For instance, a cross-national study of working from home policies by Timsal and Awais (2016) suggests that culture significantly impacts flexible work arrangement policies with control-oriented cultures implying more challenges with WFH. However, during the pandemic, the adoption and variation of such policies grew fast with multiple new perspectives emerging (Choudhury, 2020). Some of these recent studies shed light on the employers' readiness to permit remote work, suggesting that work-from-home is here to stay. For example, in their survey covering the period from July 2020 to March 2021, Barrero et al. (2021a) found that, after the pandemic ends, Americans estimate to spend on average 20 percent of full workdays working from home and that both the employee preferences to work from home and the employers' plans for the employees to work from home are increasing. Other studies that outlined corporate policies for remote work include studies of working from anywhere, hybrid work arrangements and remote first companies (Choudhury, 2020; Santos and Ralph, 2022a). In this article, we make a deep dive into the different trends and the variety of options incorporated in the new work policies of 17 companies and discuss how these companies have adjusted their strategies to address the demand of the new reality.

2. Overview of the cases and data

The data behind our findings comes from 17 companies developing software-intensive products that differ in application domain and size, from small one-office companies to large international companies represented by several offices (see an overview of our dataset in Table 1). Our case selection strategy was purposeful, aiming at maximum variation with respect to future work policies to illuminate the questions under study (Patton, 2002) to achieve the greatest possible amount of information on the given phenomenon. We included all available cases that exhibit important common patterns that cut across variations of the flexibility given by the companies to their employees, even though the included cases are different in location (Scandinavia, Central, Eastern and South Europe, Asia, and US), size (large multi-site corporations, medium companies and single-office small companies) and application domain (telecom, fintech, music streaming, IT consulting, military). Further, the case selection was performed opportunistically (Patton, 2002), i.e., the cases emerged from following leads during field work with collaborating companies. Based on a diverse set of cases, we aim to gain an understanding of how employees and companies are approaching WFH after the pandemic. The diverse case selection is justified by the nature of our study — a purely descriptive, understanding-oriented phenomenological study (Flyvbjerg, 2006) that is expected to generate new knowledge and scientific value stemming from the accumulated set of emerging WFH policies. A representative case or a random sample in such situations may not be the most appropriate strategy as the typical or average case is often not the richest in information (Flyvbjerg, 2006). Finally, the selected cases cannot be treated as representative of the IT/software industry, a particular application domain, or a location as our strategy was not to find a typical case but instead maximise the variation. In a way, we prioritised the depth of investigation (studying corporate policies) over the breadth in terms of the number of data points (soliciting self-reported responses regarding corporate policies), which is typical when selecting in-depth case research over surveys. We foresee that policies that in our dataset emerge as a typical case might be critical in a particular location, company size or domain. Similarly, the extreme cases in our datasets could be typical to a particular location, company size or domain. In this article, we present the results of 22 company-internal surveys of employee preferences for working from home or in the office (see the summary in Table 1), and 26 corporate post-pandemic work policies (see the summary in Table 2).

Surveys: Employee preferences for WFH were elicited through corporate surveys designed in the companies. We had access to

Table 1
Overview of the data collection activities and collected data.

	Corporate cases included in the study	Locations	Size	Survey of WFH preferences			WFH policy, status
				N	Rate	Executed	
Large (N>250)	**Tietoevry**: Large multinational technology company delivering software solutions to customers worldwide. Detailed analysis of five largest geographic locations and a corporate survey from 16 geographic locations.	Norway Sweden Finland India Czech Rep	3'881 3'270 2'954 2'542 3'676	1026 1102 793 593 390	28% 28% 24% 20% 15%	Apr–May 2021	Norwegian hybrid working guidelines, Oct 2021 Swedish hybrid working guidelines, Oct 2021 Finish hybrid working guidelines, Oct 2021 Indian hybrid working guidelines, Nov 2021 Czech hybrid working guidelines, Nov 2021
	Telenor: Large multinational market leading telecom operator. Four business units.	Norway Sweden Denmark Finland	3'446 1554 1'086 1'487	2219 – – –	65% – – –	2021 – – –	Guidelines flexibility in 'Tnor' Group, Aug 2021 Rules of Engagement, Jul 2021 "Flexible work", Jun 2021 "Flexible work model", Nov 2021
	'KNor' (pseudonym): Large Norwegian company developing embedded software products. One development department.	Norway	3'676	395	58%	May 2020	"Guideline for Hybrid Working", Jan 2022
	GFT: Medium-size European consultancy company delivering software solutions for finance and insurance sectors. Detailed analysis from one site, and survey data from five Spanish sites.	Spain	1'800	1045	72%	Spring 2021	Policy for remote work, Oct 2018/2020
	'InterSoft' (pseudonym): Large international company delivering music streaming services. R&D locations.	Sweden, US, the UK	1'411	1408	100%	Mar–Apr 2021	"Work from anywhere", Fall 2021
	Storebrand: Large software company leading the Nordic market in long-term savings and insurance. Whole company.	Norway	1'300	358	26%	Jan 2022	"Future Storebrand", Spring 2021
	'GlobCo' (pseudonym): Large multinational telecom company delivering software intensive systems. A Swedish site and several Indian sites in one business unit and a Chinese site in another business unit.	Sweden India China	358 961 54	276 769 35	77% 80% 65%	Mar 2021 Mar 2021 Mar 2021	"Instruction Remote Work in Sweden", Fall 2021 "Flexible work guidelines", Dec 2021 "Alignment of practice", Dec 2021
	'Fswed' (pseudonym): Large software development company delivering financial systems and services. Whole company.	Sweden	589	429	73%	Mar–Apr 2021	WFH update on intranet, Oct 2021
	SB1 Utvikling: Large software development company owned by a Norwegian alliance of banks. Whole company.	Norway	355	230 224	65% 63%	Apr–May 2021 Sep–Oct 2021	"Create rule of conduct together", Jun 2021
	Sbanken: Large Scandinavian online-only bank offering financial services. Whole company.	Norway	344	209	61%	Nov 2021	"Sbanken post COVID", Fall 2021
	QualityMinds: Medium-sized consultancy company focusing on software quality, quality assurance and development. Whole company.	Germany and Poland	250	90	36%	Oct 2021	"QM Company Guide", 2013
Medium	**KnowIT**: Medium-sized site of a consultancy company delivering digital transformation and systems development services.	Norway	175	138	79%	Sep–Oct 2021	"Guidelines and recommendations for mandatory hybrid workday", Fall 2021
	Kantega: Medium-size software company developing bespoke software for diverse markets, incl. financial and public sector. Whole company.	Norway	172	162	94%	Jun 2021	Principles for future workplace, Fall 2021
Small (10<N<49)	**CQSE**: Small product development and consultancy company specialised in software maintenance and evolution. A German site.	Germany and US	50	–	–	–	Flexible remote work policy, prior to COVID-19
	Blank: A small employee-owned consultancy company offering software development services and developing own products. Whole company.	Norway	44	36 40	82% 91%	Feb 2021 Dec 2021	Flexible work principles (established with the company foundation)
	Malvacom: Small consultancy company delivering applications and server solutions. Whole company	Sweden	17	13	75%	Nov 2021	Policy for remote work, Oct 2021
	'SpanCo' (pseudonym): Part of a large consultancy company developing software for the banking sector. A Spanish site.	Spain	13	–	–	–	Employment contract, Sep 2021

the results of 22 surveys from 20 corporate entities (including 2 runs of the survey in two companies). The summary in Fig. 1 portrays the voice of 11'318 respondents. The response rates in different companies varied from the min of 15% to the max of 100%, with 65% as the median. Since the scales of possible response options across surveys varied, we integrated the results using a common scale of frequency of WFH: "Never" (meaning only in the office), "Occasionally" (less than once a week), "Less than half week" (1–2 days a week), "Half the time", "More than half week" (3–4 days a week), "Occasionally in the office" (less than once a week in the office), and "Always". Notably, not all response options have been available in each of the surveys (for example, some surveys offered respondents to choose "50:50%", while others had 1 day/week, 2 days/week, etc.). This is why we recommend looking at the three major trends with respect to the number of responses in favour of primarily office work ("Never" and "Occasionally"), those in favour of primarily remote work ("Always" and "Occasionally in the office"), and those who give preference to flexible or hybrid work arrangements ("Less than half week", "Half the time" and "More than half week").

Further detailed analysis was performed in selected cases, with selection driven by the availability of raw survey data and various demographic information for stratified analyses. First, in two companies, we yielded to see whether respondents change their preferences for WFH over time (presented in Fig. 2). We also received results of stratified analysis of role and age in the Storebrand's survey. Stratified analysis was also performed for the survey from Telenor Norway, using ANOVA factor analysis (Allen, 2017), for the preferences for WFH, including gender, role, age, and commute time (presented in Fig. 3). We have used n-way ANOVA analyses to identify whether preferences for WFH might be dependent on different factors or their interactions and performed Tukey *post-hoc* tests to identify which groups in a particular factor have different preferences. We only report differences on preferences in the stratified analysis when they are statistically significant ($p < 0.05$ with $\alpha = 0.05$). Notably, the higher level of α is selected due to the interest in uncovering new relationships rather than performing strict hypotheses testing. In addition, we ran a set of logistic regressions (Menard, 2002) using as the dependent variables binary measures of employees' stated preferences to work from home and the same explanatory variables. Based on these regressions, we present the probabilities for WFH and the related marginal effects of each variable.

Work policies: Next, we reviewed post-pandemic work policy documents. We have gathered 26 policies, some designed to regulate the WFH in a single office, while others represent centralised corporate efforts. We analysed the options permitted by the corporate policies (summarised in Fig. 4), and the exceptions from the general rules, if any. Corporate policies were discussed with representatives from each company in informal and/or formal interviews. During these interviews, we additionally enquired whether it is permitted to move within the country or globally, and how the companies support home office equipment of those working remotely.

Table 2
Overview of the corporate work policies.

Company	Locations	Extent of remote work permitted	Exceptions	Relocation permit
TietoEVRY	Norway	Not centralized. Remoters must be available during work hours (8 hours between 7-17). [agreed in a work unit] [approved by a manager] [agreed with stakeholders]	Management has the right to restrict WFH for certain roles, tasks, based on customer requirements, technical equipment, or security.	Within the country
	Sweden	Not centralized. Remoters must be available during work hours (8 hours between 8-17). [agreed in a work unit] [approved by a manager] [agreed with stakeholders]		Within the country
	Finland	Not centralized. Remoters must be available during work hours (7,5 hours between 8-17). [agreed in a work unit] [approved by a manager] [agreed with stakeholders]		Within the country
	India	Not centralized. Remoters must be available during work hours (not specified). [agreed in a work unit] [approved by a manager] [agreed with stakeholders]		Within the economic zone
	Czech Rep	Not centralized. Remoters must be available during work hours (not specified). [agreed in a work unit] [approved by a manager] [agreed with stakeholders]		Within the country
Telenor	Norway	Not centralized. [agreed in a work unit]	Management permits working from anywhere if work tasks can be performed from home, it is operationally reasonable/ justifiable, if the working environment is fully satisfactory. Management reserves the right to restrict WFH due to considerations relating to work distribution, collaboration or physical or psychosocial work environments.	Within the country
	Sweden	Fully remote is not an option, otherwise flexible [agreed in a work unit]		Within the country, within a reasonable commuting distance to the office [approved by a manager]
	Denmark	Not centralized. [agreed in a work unit] [approved by a division manager]	Management has the right to restrict WFH based on customer needs, security needs, team needs or due to underperformance.	–
	Finland	Not centralized. [agreed in a work unit]	Management reserves the right to restrict WFH for roles and tasks that require physical presence in the office	Within the country
	Pakistan	Fully remote is not an option, otherwise flexible [approved by a manager]	–	Within the country
'KNor'	Norway	In Norway, employees can and must normally work from home 2-3 days/week, but negotiable. Remorters must be available during the work hours. [approved by a manager]	Management has the right to restrict WFH for certain roles, if the work situation at home does not comply with the requirements, if the WFH is not fully justifiable, if the employee becomes ill or injured due to the WFH or if the employee underperforms. Management has the right to ask the employee to visit the office when required (meetings, social events).	Within the country.
GFT	Spain	Flexible. Remorters must be available 10-16.	Management reserves the right to restrict WFH for certain projects or ask the employee to work on-site at a customer premises. HR,	Permanent moves within the country, but negotiable. Temporary relocation permitted globally but shall be communicated in advance.
			infrastructure and office support roles have a rotating shifts system (at least one person from each role is on-site).	
'InterSoft'	Sweden	Flexible. [approved by a manager]	Management has the right to restrict WFH for certain roles, tasks, or units.	Within the approved list of countries [approved by a manager]
	USA			
	The UK			
Storebrand	Norway	Always offsite is not allowed, otherwise flexible [agreed in a work unit]	Management has the right to restrict WFH for certain roles, tasks, or units.	Within the country, within a normal commuting distance to the office [approved by a manager]
'GlobCo'	Sweden	50% of the time permitted for WFH within a calendar year. [approved by a manager]	Management has the right to restrict WFH for certain roles, tasks, or projects, unproductive or inexperienced employees (in China WFH not available in the first six months of employment), when efficient leadership is inhibited or in the face of health, work environment and security issues.	Within the country, within a reasonable call up time. [approved by a manager]
	India			Within commute time to the base location.
	China	Max 1 day/week. Remorters must be available during the work hours. [approved by a manager]		–
'FSwed'	Sweden	Preferably no more than 1-2 days/week, but negotiable [agreed in a work unit] [approved by a manager]	Management has the right to restrict WFH for certain roles, tasks, or units	–
SB1 Utvikling	Norway	At least one common day in the office per team, otherwise fully flexible [agreed in a work unit]	Management has the right to restrict WFH for certain roles, tasks, or units.	Within the country [approved by a manager]
SBanken	Norway	Max 2 days/week, but not on Wednesdays [agreed in a work unit]	Management has the right to restrict WFH for certain roles, tasks, or units.	Within the country [approved by a manager]
QualityMinds	Germany, Poland	Not centralized [agreed in a work unit] [approved by a manager]	The team lead assesses the feasibility of remote work and has the right to restrict WFH if it negatively affects the collaboration in the team (e.g., major time zone differences).	Global relocation is permitted and actively supported by HR. [approved by a manager]
KnowIT	Norway	Optimally no more than 2 days/week, but negotiable [agreed in a work unit] [approved by a manager] [agreed with customers]	Those who do not have a suitable home office	Within the country [approved by a manager] [agreed with customers]
Kantega	Norway	Fully remote is not an option, otherwise flexible [agreed in a work unit] [agreed with customers]	–	Within the country, within a reasonable commuting distance to the office, but negotiable. [approved by a manager]
CQSE	Germany	Not centralized [agreed in a work unit]	The team is responsible to ensure continuity of work and satisfy the customers' needs for continuous customer support. Subsequently, the team decided who shall be in the office when.	Global relocation is permitted if it does not impede efficient collaboration in the team. Salaries are adjusted to reflect the cost of living in respective places.[approved by a manager]
Blank	Norway	Not centralized	–	Within the country [agreed with customers]
Malvacom	Sweden	Max 3 days/week. Remorters must be available during 9-15.	Fully remote work can be permitted in exceptional cases upon request. Management has the right to restrict WFH if the employee does not have a good home office equipment, work environment and connection.	Within the country, but recently opened for foreign employment [approved by a manager]
'SpanCo'	Spain	Employees can choose between 100% from home or 100% from the office. [approved by a manager]	Management has the right to request employees to temporarily work at a customer office, or restrict WFH for certain projects, tasks, or if employees are unproductive.	Within the country [approved by a manager]

3. Employee preferences: How much do employees want to work from home?

To understand the future demand for flexibility, we integrated the results of corporate surveys of employee preferences for working from home (see Fig. 1). What did we find?

3.1. How many want to return to the office?

Surprisingly, there are not that many employees who will return to the traditional way of working "at the office 9 to 5, five days a week" (the median value for employees who opted for "Never at home" and "Occasionally from home" options is only 10%). Groups of employees who choose to work only from the office reach the maximum of 15% in the case of the Norwegian Blank, where 43% of the employees also choose predominantly office work with occasional work from home.

3.2. How many do not want to return to the office at all?

Groups who want to only work from home ("Always" category) vary from 0% in the Swedish Malvacom, the Norwegian

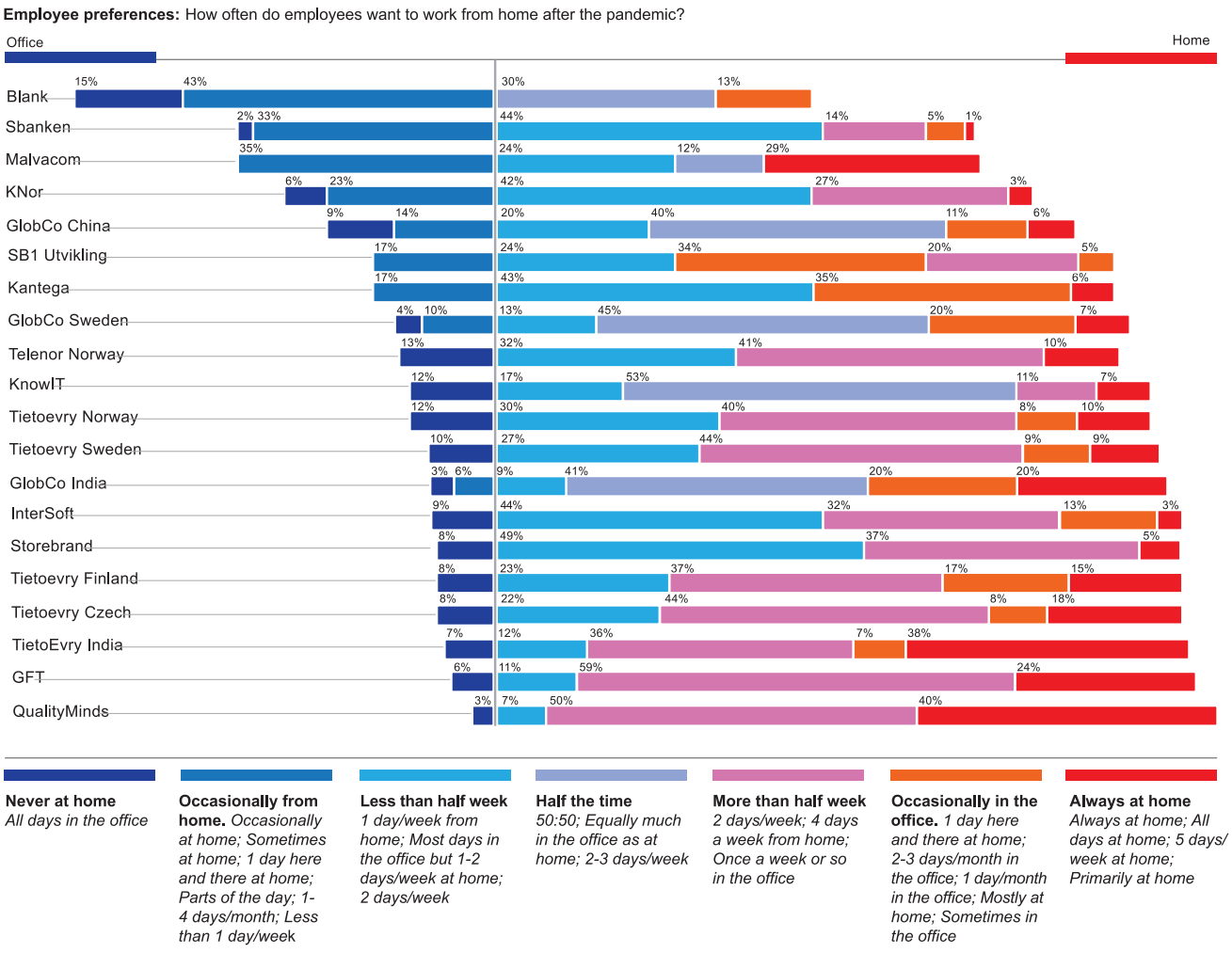


Fig. 1. Overview of the employee votes for working from home options.

SB1 Utvikling and Kantega, to 38% in Indian Tietoevry, 40% in the German QualityMinds, and 62% in the exceptional case of the Spanish SpanCo, the votes of which reflects the binary choice. Interestingly, the median value of employees who opted for "Always" at home and "Occasionally in the office" mirrors the office workers — 10%. Five companies from Germany, India and Spain in our dataset report that at least every fifth employee prefers to continue to work fully remotely.

3.3. How prevalent is the demand for flexibility?

The vast majority of respondents in our dataset choose to mix days in the office with days at home, which recently gained a label of *a hybrid work setup* or *flexible work arrangements* (Gratton, 2021). The main motivation for this trend is that home offices are typically associated with way more superior conditions for concentration and uninterrupted work, while offices are seen as way more superior for collaborative work (Smite et al., 2022). There are, however, some exceptions to this trend. A recent survey by the Gensler Research Institute (2021) suggests that younger generations of employees who often live in homes unsuited for concentration work are less productive working from home than from the office and want to use the office for uninterrupted work.

The preferred proportion of time spent in the office vs. home varies across and within companies. In fact, our data shows that in companies that surveyed their employees several times, the results over time varied (changes up to 10%–20% in selected categories) with fewer extreme preferences and more responses in the hybrid categories (see Fig. 2). Admittedly, these results have no statistical power (due to the inability to trace the changes in individual responses) and are thus only indicative.

Interestingly, in Tietoevry, which practiced WFH before the pandemic, we were able to compare the *pre-pandemic working* with *the employee preferences for post-pandemic working*. To our surprise, 1/5 of previously "mostly office" employees would like to visit the office less than once a week, while roughly 1/5 of "mostly remotes" would like to go to the office at least 3–4 days/week. This means that the attitudes towards remote work have changed significantly and that companies cannot predict the employee preferences based on the historical choices.

3.4. Who chooses which preferences?

In cases where we had access to the raw survey data, we performed detailed analysis to check for demographic predictors of the preference for office or home working (see Fig. 3). The candidate factors were age, tenure, gender, managerial role or not, size of the cities, countries and pre-pandemic choices.

Role: When contrasting employees' without a managerial role vs managers' choices in Storebrand (see Fig. 3A) and Telenor Norway (see Fig. 3B), we found that managers prefer to spend more days at the office than other employees.

Age: In Storebrand (see Fig. 3C) and Telenor Norway (see Fig. 3D), we checked employee preferences for WFH across different *age*

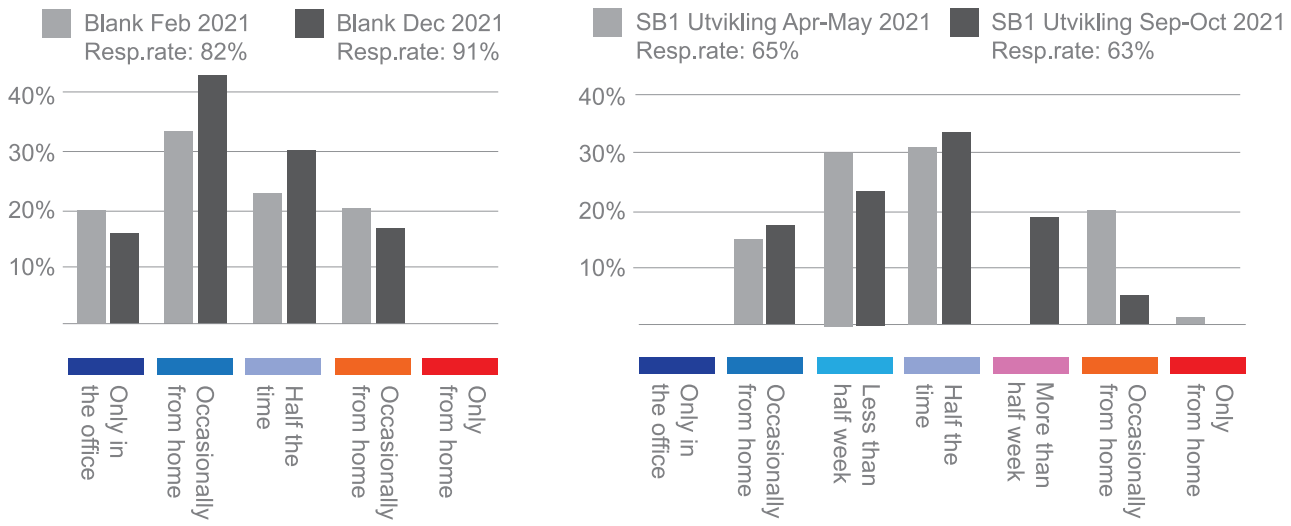


Fig. 2. Changes in preferences for WFH overtime at Blank and SB1 Utvikling. Result: Fewer extremes, more opt for hybrid with more office presence in Blank and less in SB1 Utvikling.

groups, and found that younger employees (20–40) prefer more office presence than more senior employees (41–60) in both companies, with a larger differences between the generations in Storebrand.

Gender: Our analysis of male and female preferences for WFH in TietoEVRY (see Fig. 3E) and Telenor Norway (see Fig. 3F) did not indicate any significant differences in preferences for working from home overall. However, when analysing differences within the age-group of 30–40 years in Telenor, we find a slightly but significantly higher preference to work from home for females. As many people in this age-group have small children, one potential explanation is that females choose to work from home more than males for reasons of caring for children.

This finding is of particular interest because telework historically has been tightly associated with gender segregated motivation (Pratt, 1984). Recent studies (Nguyen and Armoogum, 2021; Barrero et al., 2021a) also found the gender-divided preferences towards WFH to vary, with higher preferences among female professionals. In particular, Bloom et al. (2021a) point out that among college graduates with young children, females want to work full time from home almost 50% more than males. Although our analysis of data from Telenor Norway does not account for employees having small children, it still aligns with this finding.

Commute time might also be one important factor when predicting the willingness of the employees to come into the office. In Telenor Norway (see Fig. 3G), we analysed employee preferences in Oslo, the capital of Norway, compared with smaller Norwegian towns, assuming that the commute time in the capital city is longer. We found that the number of employees who want to work in the office is three times higher in smaller towns. Unwillingness to spend time commuting was the No 1 reason employees were not present in the office in three other Norwegian companies — SB1 Utvikling, Storebrand and Sbanken. To exemplify the commute length, in SB1 Utvikling 36% of employees spend 1,5 h commuting to and from work each time they go to the office.

Other candidate predictors that we have not managed to analyse include different *family situations* (living alone vs living with a spouse vs living with a family with kids (further divided into different age groups)), which might gravitate people towards working from home or from the office, as well as *organisational and national cultures*, which determine the level of autonomy, family organisation and gender-based role differences.

4. Post-pandemic work policies: How much do companies allow employees to work from home?

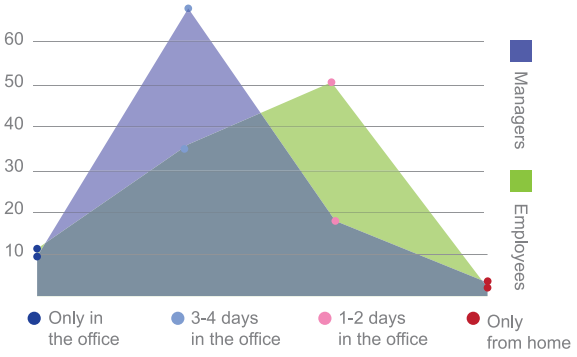
The next important question is how companies should respond to the increased needs for flexibility that we have seen in the employee surveys. Motivated to find the answer, we collected the guidelines, strategies, and policies that regulate the extent of permitted work from home from 17 companies. Fig. 4 summarises our findings (see policy details in Table 2).

4.1. Most companies have established new WFH policies, instructions or regulations

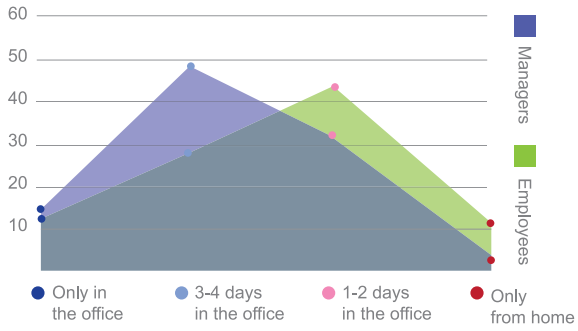
Only a few companies in our study (Norwegian Blank, Spanish GFT, German CQSE and multinational Tietoevry) have long traditions of flexible work prior to the pandemic. While remote work in these companies has always been a free choice, it is a new privilege in many other companies. To regulate this privilege, the vast majority of our case companies have formulated guidelines or policies for the post-pandemic times released for piloting or rolled out in the entire company as early as in June 2021 or as late as in January 2022, with the majority being communicated in the fall 2021. These include policies, regulations, and instructions for flexibility, remote work, or hybrid work (GFT, CQSE, Tietoevry, 'GlobCo', Malvacom, Telenor), policy for work from anywhere (InterSoft), corporate rules such as the rule of conduct (SB1 Utvikling) and rules of engagement (Telenor Sweden), corporate strategies such as "Future of the Storebrand", "QualityMinds Company guide", and "Sbanken post COVID", or principles for flexible/hybrid work (Kantega, Blank, 'Fswed'). The format of the new policies varies from separate contract agreements to Word documents (length varies from 4 to 18 pages), collections of slides or simply status emails or intranet posts.

4.2. Some companies have centralised restrictions for WFH and some do not

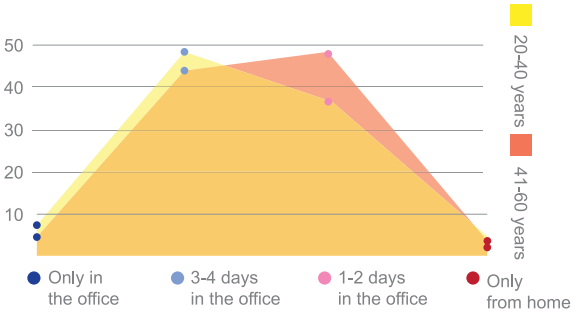
Slightly more than half of the companies in our dataset decided to restrict the flexibility regarding the extent of remote work. Two companies ('SpanCo' and 'Knor') introduced a special status to remote employees, who once choosing that option are expected to be remote (fully in 'SpanCo' and 2–3 days a week in Knor). Seven companies restricted the proportion of time spent in the office vs home. 'GlobCo' headquartered in Sweden permit



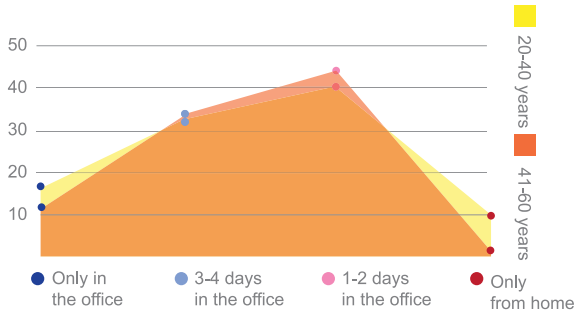
A. by **Role** (managers/employees) at **Storebrand** (N=358). Result: Managers prefer more office presence.



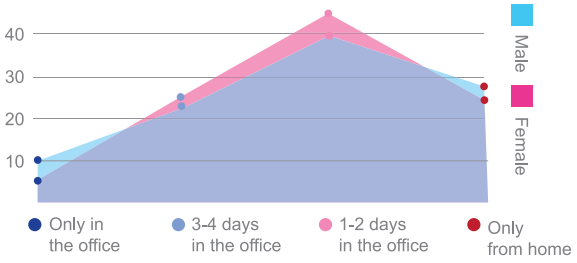
B. by **Role** (managers/employees) at **Telenor Norway** (N=2014). Result: Managers prefer more office presence.



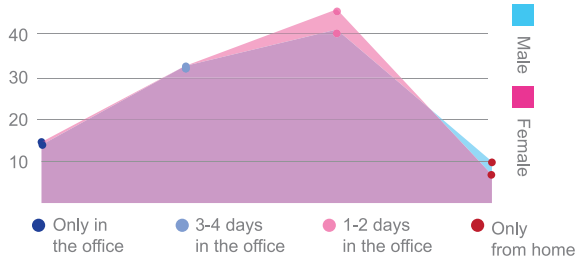
C. by **Age** at **Storebrand** (N=358). Result: Seniors prefer to work slightly more work from home than juniors.



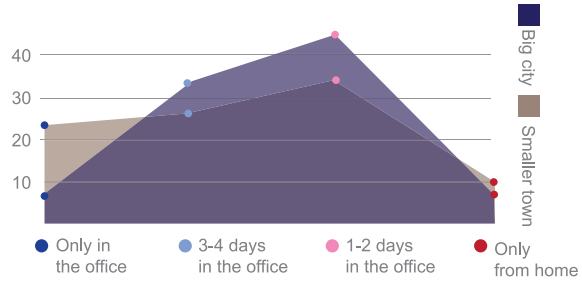
D. by **Age** at **Telenor Norway** (N=1815). Result: Fewer seniors want to work only in the office.



E. by **Gender** at **Tietoevry** (N=4450 across 16 company sites). Result: No significant differences between genders



F. by **Gender** at **Telenor Norway** (N=2019). Result: No significant differences between genders



G. by **Commute time** (Oslo/smaller Norwegian towns) at **Telenor Norway** (N=2019). Result: People from smaller towns choose more office presence than city inhabitants

Fig. 3. WFH preference distributions in different groups of respondents.

remote work from home 50% of the time within a year motivated by the local regulations in Sweden, which are also applied in the company's remote site in India. Swedish Malvacom limited WFH to max 3 days/week, Sbanken, KnowIT and 'Fswed' limited WFH to max 2 days/week, while 'GlobCo''s Chinese site to only 1 day/week. Additionally, Sbanken specifies one mandatory office day for everybody. Finally, five companies (Storebrand, Telenor Sweden and Pakistan, SB1 Utvikling and Kantega) stated that being fully remote is not an option and that everyone shall spend at least one day per week in the office. In contrast, QualityMinds,

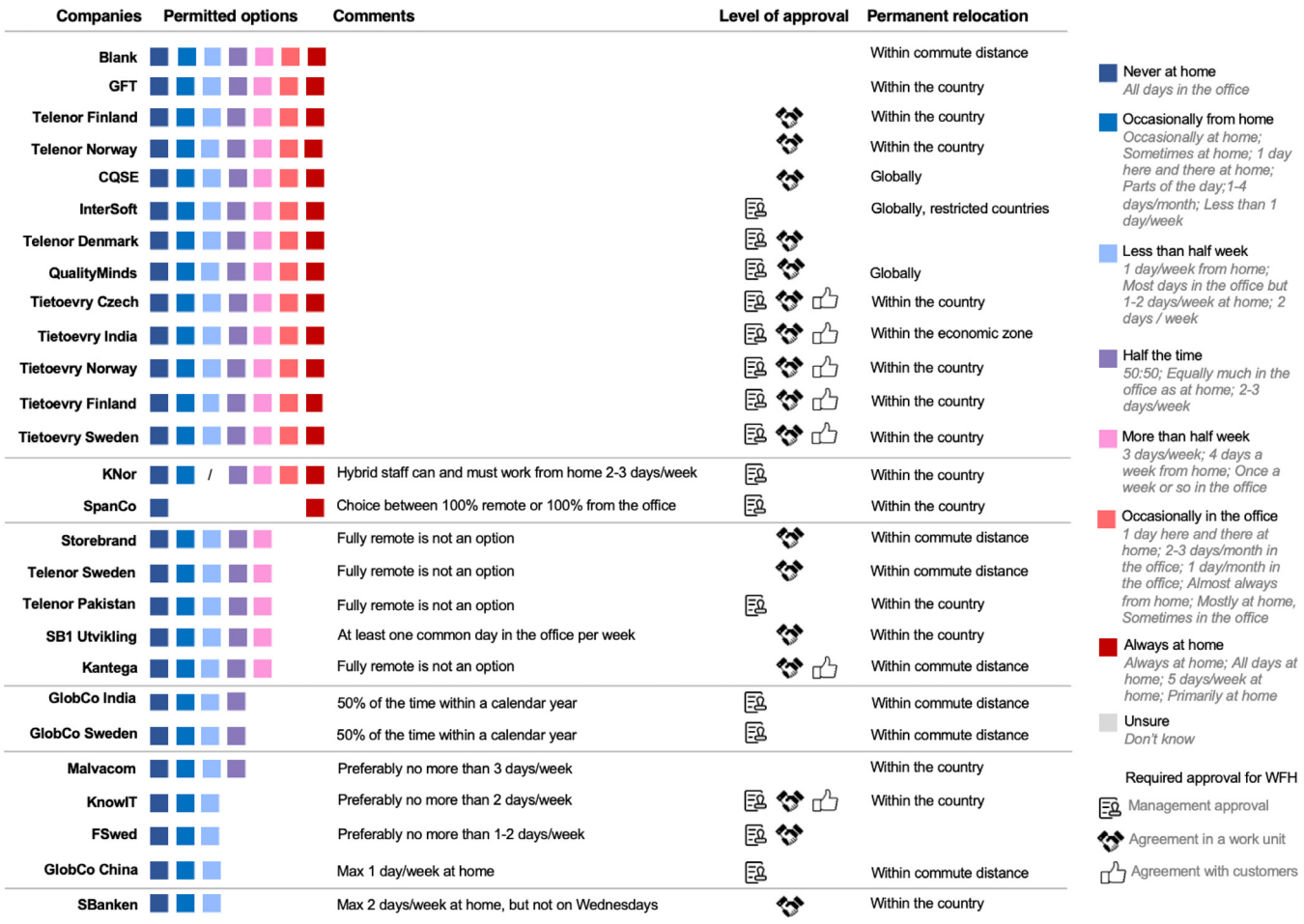


Fig. 4. Overview of the company policies and regulations for working from home options.

CQSE, GFT, all sites in Tietoevry, 'InterSoft', Blank, and Telenor in Norway, Denmark and Finland do not have any centralised restrictions and provide flexible choices in their work policies.

4.3. Flexible choices are not always fully flexible for individuals

One may think that flexibility of choice means one can wake up in the morning and freely decide: "Today, I want to work in the office", or from home for that matter. Our analysis suggests this is not the case. In some companies, the freedom to make an ad hoc decision about where to work today is restricted by the need to align personal choices with other team members or customers. Most companies in our study ask individuals to agree on the extent of working from home in the team (see the handshake icon in Fig. 4). In Telenor Norway and Telenor Denmark, each team is explicitly expected to document their agreement in a document called a "Team Manifesto", in which the members describe which meetings, tasks or functions should preferably be conducted virtually, which can be carried out in a hybrid/mixed mode with some co-located participants and some calling in, and which require physical presence in the office. Further, team members are invited to discuss and agree on the ways to ensure that no team members get isolated or systematically left out of discussions taking place at the office, ways to build the team, keep the team-spirit and the team culture, and practices to help new hires learn from the more experienced ones. Also, the teams define which weekdays all members should come into the office for joint meetings. It is important to note that the team manifestos are living documents in which the teams make continuous updates as they get accustomed with the new trend of increased remote work. At CQSE, the entire team is expected to manage their working mode autonomously, including vacations that team members shall take, with no formal approval process (e.g., by the team lead). Team-based decisions without management approval are also made in Telenor Norway and Sweden, Storebrand, SB1 Utvikling and Sbanken, while many other companies require a team lead, or an immediate manager to approve the team-made choices.

Besides the need to align with others, some companies make the individual WFH choices binding for a longer period (typically 12 months). 'InterSoft' allows employees to choose whether to work predominantly in the office (max 1 day a week from home) or predominantly from home (max 1 day a week from the office) with a binding period. Similarly, employees in 'SpanCo', Malvacom, 'Knor' and QualityMinds who choose to work predominantly remotely can sign a special contract, which is binding for an agreed period. These restrictions are often motivated by the local legislation (such as insurance that must cover home office), predictability of office presence, availability of a personal work desk or other office benefits (subsidised lunches, internet, or electricity).

4.4. WFH is not for everybody

The rules specified in the future hybrid work policies do not always apply to every single employee in the company. Many companies reserve the right to make exceptions from the WFH privilege for specific roles, jobs, or customers projects. For example, many companies have special rules for supporting roles such as technical support, administration, and employees of human resources or finance department. Some companies ('Knor', Knowit, Malvacom) put suitable home office equipment as a prerequisite for WFH. Some others (QualityMinds, CQSE, 'SpanCo', 'GlobCo', Telenor Denmark) can prohibit work from home if employees underperform or fail to collaborate with team members and customers. Employees who carry out customer support or depend on security-critical infrastructure in several companies may be required to be onsite, or to work in shifts. Finally, 'GlobCo' China restricts work from home for newly onboarded employees in their first half year of employment. Overall, the main difference between the companies is in how high up in the hierarchy the decisions about hybrid work policies are made. When decisions are made by the CEO or executive management team, it is hard to cater to the different needs of employees as top-level managers do not have the fine-grained information to do that. However, a beneficial aspect of organising this way is that the rules will be the same for everybody. When decisions about hybrid policies are made on the lowest team-level in the company, it is easier to cater to individual needs of team members and their tasks. However, such an arrangement will lead to different benefits and practices across teams which might be viewed as unfair and potentially lead to unhealthy biases.

4.5. Remote rarely means from anywhere

If working remotely is permitted, can "remotely" mean "from anywhere"? This question is of interest for those, who have moved into new accommodations during the pandemic, often further away from the office location, as well as for expats who have moved globally to their homeland countries to spend the pandemic with the extended family members. We learned that although not always regulated in the policies, most companies participating in our research had restrictions for relocation and only allowed employees to move within the same country, primarily due to tax implications and insurance limitations (see Permanent relocation column in Fig. 4). For similar reasons, Tietoevry India limits relocation to only within the same economic zone, while Norwegian Blank and Storebrand, Swedish 'GlobCo' and Telenor Sweden allow employees to move within a reasonable commute distance. Following contemporary trends, Storebrand introduced a policy to minimise business travel, which is also used as one motivation for why not to allow employees to live on a far distance.

Notably, it is not that surprising that many companies do not permit global relocation, since such transitions require awareness of the local regulations. For example, CQSE reports being required to adjust salaries to the employees' cost of living when relocating. To "test the water", Malvacom has allowed one of the remote employees to work from Spain, where he is staying an extra week after vacation. The company manager reports that if the experiment is successful, the company will consider opening up an option of broader relocation.

On the contrary, despite prior approval, QualityMinds, CQSE, and 'InterSoft' permit global relocation. All practical questions related to relocation in these companies are supported by HR departments. 'InterSoft', which employs engineers from all over the world, restricts the choices of relocation to countries with local legal corporate presence, and reports that in 2021, 129 employees have already moved globally and 286 employees in the US alone have moved to another state. International relocation can be further restricted due to customer needs, security regulations, access restrictions to infrastructure or if it impedes efficient collaboration.

4.6. Companies take responsibility to ensure ergonomic conditions in home offices

In many European countries, companies are legally required to ensure an appropriate workplace for their employees. But what happens when the workplace is in someone's home? Naturally, employers do not have access to one's home to check the suitability of the work environment. In some companies, the responsibility for ensuring proper equipment and a good work environment lies with the employees who want to work remotely, while some companies condition WFH to the ability of the immediate management to check the suitability of the home office, which is made explicit in special agreements. Alternatively, some companies require employees who apply for hybrid working to declare that their work environment at home is in line with the national rules and regulations and does not entail unfortunate physical strains.

Notably, many companies in our study support home office equipment beyond the necessary IT equipment. Reimbursement programs for home office equipment are active in Storebrand (500€), SB1 Utvikling, 'InterSoft', Sbanken, 'Knor', Blank (beyond budgeting), Kantega (1'000€), and CQSE, which provides full equipment either at home or in the office and which has offered 1'000€to purchase office furniture during the pandemic. More advanced support includes covering internet fees (Blank, SB1 Utvikling, Tietoevry Norway, 'Knor' (up to 50€), 'SpanCo' (10 €/month)), electricity (10 €/month in SpanCo), and subsidised lunch benefit (Tietoevry Finland).

4.7. Insurance at work (or home) is also an important question

The underlying problem with flexible working from home is that companies are responsible if something happens "at work", which is typically regulated in insurance policies. To address these challenges, some companies extended the common insurance to cover flexible work times (24/7) and employees' home addresses. In some countries such insurances are mandatory on a national level. For example, German regulations for mobile workers extended the incident insurance to cover not only working from home, but employee trips to get a lunch or drop off children in schools or daycare, and even shorter "trips" to get a drink in the kitchen or visit a restroom, all of which were previously not insured.

5. Concluding discussion

In this article, we illustrated the new trends in the demands for flexibility among company employees and modifications to work policies that are emerging in response to these demands. With respect to employee preferences for WFH, our key findings are:

- Employees across and within all studied companies have diverse preferences for WFH;
- Employee preferences are related to role, age and commute time, but not to gender *per se*. In particular, managers, younger employees and employees working in smaller towns (short commute distance) prefer more presence than other employees without managerial roles, senior employees and employees working in larger cities (long commute distance);

- Employee preferences might change over time.

With respect to corporate policies for WFH, our key findings are:

- Companies have diverse policies concerning the degree of flexibility for WFH;
- There are no clear patterns for WFH policies related to size, domain or location;
- There are three main WFH strategies: (1) decentralised WFH regulation, (2) centrally regulated onsite workdays, and (3) centrally regulated proportion of time spent on WFH, or a combination of these options;
- Many policies include exceptions with respect to the extent of permitted WFH;
- Many corporate WFH policies are released for evaluation and are subject to future changes.

Our study captures the new trends and contributes to the ongoing experimentation with the WFH policies by aggregating the options currently considered in the industry with respect to the extent of flexibility and centralised regulations (see Table 2). The knowledge of these trends can be useful for managers, teams and individuals to cope with the changes in the workplace. The selected cases include companies that have pioneered new ways of working and granted to-date inexperienced degree of flexibility. The need and the widespread of the increased flexibility are also evidenced in the summarised findings from numerous surveys of employee preferences for WFH. The detailed analysis of the employee preferences in selected companies provide further important insights into the demographic motivators for the WFH preferences, which help to contextualise the needs for flexibility.

In the following, we discuss a few important implications arising from our findings.

The demand for flexibility concerning the privilege to work from home is apparent in our study. As well as the inability of the companies to satisfy all needs. This is because the needs of the employees vary greatly. The majority of the survey respondents in our study demand flexibility, similarly to related surveys from the US (Barrero et al., 2021a) and the UK (Taneja et al., 2021) that suggest that the majority desire to switch to two or three days per week working from home after the pandemic. Yet, there are also the extreme groups of those who want to continue working entirely from home, and those preferring to work full time from the office. Along with personal preferences, it is fair to assume that many employees will have their preferences for others' presence or absence in the office. There will be employees who come to the office to collaborate with their teammates and colleagues, as well as recent new hires who are willing to learn from more senior colleagues, who will be upset if nobody else is present. This is why we believe that the biggest challenge for companies today is to find a way to accommodate the diverse needs of the employees.

The studied work policies in our dataset come from various companies diverse in size, domain, and location. And yet, we find no pattern in the choice of WFH strategies based on these factors. Our study shows that there are three core strategies to regulating WFH: (1) decentralised WFH regulation through management approval, agreement in a work unit, or agreement with customers, (2) centrally regulated onsite workdays, and (3) centrally regulated proportion of time spent WFH. We can also report that the common denominator with respect to WFH policies among the studied companies was the decision to opt for a hybrid workplace — office days mixed with WFH days.

Our findings do not explicitly address the personnel performing supporting functions or not knowledge-intensive work tasks. Further, most companies in our dataset have reserved the right to restrict WFH for certain roles, tasks, units, projects, customers, home office situations or personal performance. This means that WFH is still seen as a privilege especially for software engineers. As such, we find that WFH is not yet for everybody.

Noteworthy, mandatory office presence seems to be considered a discriminating policy, at least the way it is portrayed in the news. Similarly to the companies in our dataset, the big IT giant Apple emphasised the importance of in-the-office collaborations and only agreed to let employees work from home two days a week, with limited exceptions. Media reports that this decision was received with a great resistance.[1,2] Another giant, JPMorgan Chase, changed their views on WFH over the last year from demanding onsite work to recognising the need for flexible work arrangements as the workers readiness to leave the employer who "chains them to their desks five days a week" is growing.[3,4] These changes in corporate work policies demonstrate a huge shift from previously well-known flexibility stigma (the negative perception towards those who work flexibly) (Chung, 2020). In fact, a study looking into employee retention shows that 40% of employees who currently work from home, even if only one day a week, would seek another job if employers require a full return to the office (Barrero et al., 2021b), as well as most workers would accept sizable pay cuts in return for the option to work from home two or three days a week (Barrero et al., 2021a). Further, Barrero et al. suggest that the re-sorting of workers with respect to the scope of remote work has already started (Barrero et al., 2021b). Therefore, in contrast to decades of stigmatisation of working-from-home, we might see the rise of stigmatisation of the WFH restrictions.

But will a hybrid workplace be the winning strategy? After all, the absence of colleagues will inevitably upset at least those who prefer to work in the office. One possible development scenario is that along with the hybrid workplaces and predominantly remote companies (remote-first), there will be predominantly office-based companies (let us call them office-first). The choice is likely to differ depending on industry characteristics and the already existing corporate culture. Our analysis of the corporate work policies suggests that such choices might vary on a team level and remote-first teams and office-first teams are likely to coexist within the same company (we already see the evidence of this among our Norwegian industry partners). Yet, many companies admitted being concerned that without employees physically present in the office, the innovation and creativity, competence development, knowledge sharing, company culture, the sense of belonging, attachment and team cohesion are likely to suffer, as also suggested in related studies (Yang et al., 2021; de Souza Santos and Ralph, 2022). These companies explicitly state in their policies that the office is the main place of work and even that remote work should not be seen as a right but as an appropriate way to solve or facilitate a specific situation as written, for example, in the WFH policies of Malvacom and QualityMinds. These two SMEs both focus on building strong teams in which team members feel like "family members" rather than workmates, and the daily presence in the office is considered a prerequisite to achieve this. Similar reasons were expressed by Jamie Dimon, the CEO of JP Morgan Chase, who previously argued that extensive working from home is incompatible with the culture of his company where "hustling" and "creativity" is key. We can therefore foresee that in the near future, we might see the rise in popularity of remote-first corporate strategies (or team practices),

[1] https://www.inc.com/minda-zetlin/apples-remote-work-policy-is-a-complete-failure-of-emotional-intelligence.html

[2] https://appletogether.org/hotnews/thoughts-on-office-bound-work

[3] https://therealdeal.com/2022/04/04/jamie-dimon-to-work-from-homers-you-win/

[4] https://www.reuters.com/article/us-jp-morgan-ceo-idUSKBN2CL1HQ

along with the office-first companies/teams occupying the niche of companies promoting teamwork and close collaboration as the core company/team values, opposed to remote work.

Finally, we see that the employees' preferences for working from home change over time, as they adjust their routines to the routines of their teammates or changing family situations. Although we do not believe that we will fully return to the old ways of working in the office, we do see that the current practices and company policies are not set in stone. Our work captures the time of experimentation, and we expect companies to adjust their policies and strategies as they accumulate experiences with hybrid work, which is also visible in the example of JP Morgan Chase. So far, most companies' experiences with extensive working from home derive from the pandemic, when managers had no choice but to let their employees work from home. As the pandemic fades and companies experiment with working-from-home policies in situations with no social mobility restrictions, we expect they will make changes. These changes will be made through a dialogue centred on the "psychological contract" between employees and employers, as evidenced in the publicly available negotiation of flexibility in the letter of Apple employees in response to the new work policy.

At the same time, it is important to note that past decisions on working from home policies are likely to shape future ones. As we have emphasised, there has been a shift in the stigma associated with working from home, where the manager trying to restrict working from home faces more scorn, than employees expressing a wish to work from home. Employees increasingly view working from home as an entitlement, and companies with relatively liberal policies with high degree of freedom to choose are likely to face strong employee resistance if they choose to rein in this freedom.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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References

Allen, M., 2017. The SAGE Encyclopedia to Communication Research. SAGE Publications INC.
Barrero, J.M., Bloom, N., Davis, S.J., 2021a. Why working from home will stick (No. w28731). National Bureau of Economic Research.
Barrero, J.M., Bloom, N., Davis, S.J., 2021b. Let Me Work from Home, Or I Will Find Another Job. Becker Friedman Institute for Economics Working Paper, University of Chicago, pp. 2021–2087.
Choudhury, P., 2020. Our work-from-anywhere future. Best practices for all-remote organizations. Harv. Bus. Rev. 98 (6), 58–67.
Chung, H., 2020. Gender, flexibility stigma, and the perceived negative consequences of flexible working in the UK. Soc. Indicators Res. 151 (2), 521–545.
Clear, T., 2021. Thinking Issues loosening ties: Permanently virtual teams and the melting iceberg of relationship. ACM Inroads 12 (3), 6–8.
de Souza Santos, R.E., Ralph, P., 2022. A grounded theory of coordination in remote-first and hybrid software teams. In: IEEE/ACM 44th International Conference on Software Engineering. ICSE.
Dent, A., Taylor, C., Aslam, D., McManus, E., Yates, S., 2021. A Practical Guide to Managing Hybrid Teams. Ocford Group, Eynsham. Englad.
Flyvbjerg, B., 2006. Five misunderstandings about case-study research. Qual. Inq. 12 (2), 219–245.
Ford, D., Storey, M.A., Zimmermann, T., Bird, C., Jaffe, S., Maddila, C., Butler, J.L., Houck, B., Nagappan, N., 2021. A tale of two cities: Software developers working from home during the COVID-19 pandemic. ACM Transactions on Software Engineering and Methodology (TOSEM) 31 (2), 1–37.
Gensler Research Institute, 2021. US work from home survey. https://www.gensler.com/workplace-surveys/us-work-from-home-survey/2020.
Gratton, L., 2021. How to do hybrid right. Harv. Bus. Rev. 99 (3), 66–74.
Kane, G.C., Nanda, R., Phillips, A., Copulsky, J., 2021. Redesigning the post-pandemic workplace. MIT Sloan Manag. Rev. 62 (3), 12–14.
Menard, S., 2002. Applied Logistic Regression Analysis. Vol. 106. Sage, London.
Miller, C., Rodeghero, P., Storey, M.A., Ford, D., Zimmermann, T., 2021. How was your weekend? Software development teams working from home during COVID-19. In: IEEE/ACM 43rd International Conference on Software Engineering. ICSE, pp. 624–636.
Nguyen, M.H., Armoogum, J., 2021. Perception and preference for home-based telework in the COVID-19 era: A gender-based analysis in Hanoi. Vietnam. Sustainability 13 (6).
Patton, M.Q., 2002. Qualitative Research & Evaluation Methods. Sage.
Pratt, J.H., 1984. Home teleworking: A study of its Pioneers. Technol. Forecast. Soc. Change 25 (1), 1–14.
Ralph, P., Baltes, S., Adisaputri, G., Torkar, R., Kovalenko, V., Kalinowski, M., Novielli, N., Yoo, S., Devroey, X., Tan, X., Zhou, M., 2020. Pandemic programming. Empir. Softw. Eng. 25 (6), 4927–4961.
Santos, R.E., Ralph, P., 2022a. Practices to Improve Teamwork in Software Development During the COVID-19 Pandemic: An Ethnographic Study. CHASE, arXiv preprint arXiv:2203.09626.
Smite, D., Mikalsen, M., Moe, N.B., Stray, V., Klotins, E., 2021. From collaboration to solitude and back: Remote pair programming during COVID-19. In: International Conference on Agile Software Development. Springer, Cham, pp. 3–18.
Smite, D., Tkalich, A., Moe, N.B., Papatheocharous, E., Klotins, E., Buvik, M.P., 2022. Changes in perceived productivity of software engineers during COVID-19 pandemic: The voice of evidence. J. Syst. Softw. 186, 111197.
Taneja, S., Mizen, P., Bloom, N., 2021. Working from home is revolutionising the UK labour market. VoxEU CEPR Policy Portal. 15 March.
Timsal, A., Awais, M., 2016. Flexibility or ethical dilemma: An overview of the work from home policies in modern organizations around the world. Hum. Resource Manag. Int. Digest 24 (7), 12–15.
Yang, L., Holtz, D., Jaffe, S., Suri, S., Sinha, S., Weston, J., Joyce, C., Shah, N., Sherman, K., Hecht, B., Teevan, J., 2021. The effects of remote work on collaboration among information workers. Nat. Hum. Behav 1–12.

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