



ORIGINAL ARTICLE


Citation: Šafránková, J. M., & Šikýř, M. (2024). Working from home during and beyond the coronavirus pandemic: Employee reflections from the Czech Republic. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 19(1), 337–362. <https://doi.org/10.24136/eq.3021>

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Article history: Received: 30.03.2023; Accepted: 15.02.2024; Published online: 30.03.2024


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Working from home during and beyond the coronavirus pandemic: Employee reflections from the Czech Republic

JEL Classification: M10; M12; M50

Keywords: COVID-19; home working; remote working; employee well-being; work productivity; Czech Republic

Abstract

Research background: Working from home (WFH) has become the norm for many people around the world due to the coronavirus pandemic. It has accelerated the implementation of WFH and has raised questions about its further use.

Purpose of the article: The article analyzes the experience of employees in the Czech Republic with WFH during the coronavirus pandemic to identify perceived benefits, difficulties, skills, and conditions related to WFH, assess the employee desire to work from home depending on their industry, age, and gender, and propose actions for further use of WFH beyond the coronavirus pandemic. The statistical verification of the dependence of the desire of employees to work from home beyond the coronavirus pandemic on their industry, age, and gender is integral to the analysis.

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Methods: The analysis is founded on data from the authors' online questionnaire survey conducted from December 2021 to September 2022. Responses from 480 employees who experienced WFH during the coronavirus pandemic in the Czech Republic are analyzed. Statistical non-parametric methods for the analysis of nominal data are used to verify defined hypotheses.

Findings & value added: A research gap concerning the further use of WFH in the Czech Republic and elsewhere by considering the employee experience is met. The findings have revealed the desire of more than half of surveyed employees to continue working from home part-time to achieve reasonable work-personal-family well-being. The desire turned out to be dependent on the employees' industry. Within further use, WFH should be taken as a specific work pattern for suitable professions and individuals with adequate organizational and technical support. Three matters concerning performance agreement, work environment, and self-management are proposed to enhance work-personal-family well-being and thus job satisfaction and productivity of homeworkers. The findings and proposals can help any theorist and practitioner interested in WFH.

Introduction

The issue of working from home (WFH) is known both in theory and in practice. However, the outbreak of the coronavirus pandemic in the Spring of 2020 and following workplace closures due to the anti-coronavirus measures have intensified WFH in many different professions and industries worldwide. For example, in the United States, about 33 percent of employees worked from home between May and June 2020 (Dey *et al.*, 2021). For comparison, in the Czech Republic, over 30 percent of employees worked from home part-time and more than 20 percent of employees worked from home full-time between April and May 2020 (Bajgar *et al.*, 2021). This often applied to professions that were not entirely suitable for WFH (Yang *et al.*, 2021), which was also the case in the Czech Republic, where WFH has become a very discussed topic among theorists and practitioners (Kucera *et al.*, 2021). Therefore, this article analyzes the experience of employees with WHF in the Czech Republic in comparison with other countries across Europe and beyond to bring additional insights to the discussion on WHF.

Increased scientific interest in WFH in association with the coronavirus pandemic is confirmed by the number of scientific articles in citation databases such as the Web of Science or Scopus. For example, entering a key phrase "working from home" (Tittle) on March 2, 2024, brought 497 results from the Web of Science Core Collection recorded between 1996 and 2024, with 465 (94%) of these results recorded since 2020. Of these 465 results

recorded between 2020 and 2024, 230 (49%) results were related to WFH during the COVID-19 pandemic.

Empirical and practical experiences with WFH during the coronavirus pandemic have affected not only theoretical concepts or business practices but also legal regulations regarding WFH (Cok *et al.*, 2022). Such legal regulations should in particular frame the essential WHF conditions (Niebuhr *et al.*, 2022). In the Czech Republic, legislative changes regarding WFH in response to the coronavirus pandemic were established in Act No. 262/2006 Coll., the Labor Code, as amended by later regulations. Principal changes to WFH effective from October 2023 include the employer's obligation to conclude a written agreement on working from home with the employee, the employee's right to compensation for the costs associated with working from home by the employer, and the right of certain groups of employees (for example, employees caring for a child under the age of 9) to ask the employer to work from home. Similar changes bring greater security to employees when working from home, although they may be associated with greater administrative and financial costs for the employer (Bayazitova *et al.*, 2023).

An example of legislative changes to WFH in reflection of the coronavirus pandemic confirms, that any theoretical, practical, or legal considerations about further use of WFH should begin with an understanding of professions and individuals suitable for WFH (Kong *et al.*, 2022). Due to the information and communication technology (ICT) boom, the use of WFH has increased in almost all professions and industries, however, some people have naturally more opportunities to work from home than others (Ellder, 2019). WFH is problematic for people working in professions integrated into the production and logistics processes, for example in agriculture or manufacturing. On the contrary, WFH is typical for people working in professions not requiring the performance of work at the employer's workplace, for example in consulting or ICT (Dingel & Neiman, 2020). The experience of homeworkers during the coronavirus pandemic may influence the further use of WFH. Therefore, it is useful to share experiences with WFH in different countries, industries, and professions, which is also the purpose of this article.

The article aims to analyze the experience of employees in the Czech Republic with WFH during the coronavirus pandemic to identify perceived benefits, difficulties, skills, and conditions related to WFH, assess the em-

ployee desire to work from home depending on their industry, age, and gender, and propose actions for further use of WFH.

The article contributes to the findings of other research studies on WFH during the coronavirus pandemic by meeting a research gap concerning the further use of WFH in the Czech Republic and elsewhere by targeting actions for further use of WFH considering the experience of employees. Knowing the experiences and expectations of employees about WFH may help manage its further use.

First, the "literature review" summarizes the knowledge about WFH and its use during and beyond the coronavirus pandemic. Second, the "research methods" define research materials, methods, and hypotheses. Third, the "results" present findings of the authors' online questionnaire survey of 480 employees who experienced WFH during the coronavirus pandemic in the Czech Republic conducted from December 2021 to September 2022. Fourth, the "discussion" discusses the authors' findings on surveyed employees' experience with WFH, compares them with the findings of other researchers, and introduces actions for further use of WFH. Finally, the "conclusions" provide a summary of the main findings on surveyed employees' experience with WFH, highlight directions and challenges of further use of WFH, mention research limitations, and suggest further research on WFH.

Literature review

The literature review presents selected research studies on WFH during and beyond the coronavirus pandemic published in the Web of Science and Scopus databases between 2020 and 2023 to highlight important experiences, benefits, and difficulties of WFH for its further use. Selected research studies are presented from global, European, and Czech perspectives.

Globally, research studies from the largest global economies and the countries outside continental Europe with the largest share of research studies on WFH and the COVID-19 pandemic in the Web of Science and Scopus databases between 2020 and 2023 were selected, i.e. the United States, China, Japan, the United Kingdom, and India. For example, Kaufman and Taniguchi (2021) reanalyzed data from the October 2020 Pew Research Center's American Trends Panel covering responses of 4,508 U.S. employees to identify individually perceived pros and cons of WFH during

the COVID-19 pandemic. They confirmed that WFH positively affects job satisfaction and work-life balance. People declared increased flexibility and productivity. On the other hand, people were dissatisfied with reduced social interactions, job security, and career opportunities. Kitagawa *et al.* (2021) compared the productivity of employees working from home and the productivity of employees working in the workplace. They used a total sample of 22,815 employees from four manufacturing companies in Japan. They revealed lower productivity of employees working from home due to an unsuitable work environment and poor communication. Similarly, Giovanis and Ozdamar (2022) examined the effect of WFH on perceived mental well-being comparing responses of people working from home with those working in the workplace during the COVID-19 pandemic. They used data from the UK Household Longitudinal Study (UKHLS) of about 30,000 households started in 2009 and the UK Household Longitudinal Study COVID-19 survey conducted in April 2020, which included most of the main sample of households. They revealed that people working from home perceived worse mental well-being. They concluded that further use of WFH should lead to hybrid arrangements enhancing the mental well-being of employees.

Hao *et al.* (2022) analyzed the effect of mandatory work from home during the COVID-19 pandemic on the mental health of male and female individuals. They used a sample of 940 individuals from four Chinese cities (Beijing, Changsha, Chengdu, and Wuhan). They uncovered that mandatory work from home during lockdowns was mentally more demanding for male individuals than for female individuals. On the other hand, married male individuals faced mandatory work from home during lockdowns better than married female individuals who had to manage work and family duties. Both male and female individuals in higher job positions dealt with mandatory work from home during lockdowns worse than other individuals in lower job positions. They confirmed that WFH has a significant effect on the mental health of homeworkers and that this effect needs to be carefully surveyed as the number of homeworkers will probably rise beyond the COVID-19 pandemic. Similarly, Mohammed *et al.* (2022) investigated how mandatory work from home during the coronavirus pandemic affected the job satisfaction of employees in India using a sample of 200 employees. They revealed that the job satisfaction of homeworkers was significantly decreased by work-family conflicts when homeworkers struggled to meet work and family demands. On the other hand, homeworkers

appreciated work autonomy, which significantly increased their job satisfaction.

From the European perspective, Ipsen *et al.* (2021) investigated people's experience with WFH during the coronavirus pandemic to identify perceived advantages and disadvantages of WFH. They used a sample of 5,748 employees from twenty-nine European countries surveyed from March to May 2020. Their findings revealed rather positive than negative people's experiences with WFH. People enjoyed a greater work-life balance, productivity, and control. On the other hand, people struggled with space constraints, social isolation, and unsuitable technology. Understanding similar advantages and disadvantages of WFH is important for achieving job satisfaction and productivity. Canales-Romero and Hachfeld (2022) analyzed the well-being of home-working parents with school-aged children during the first wave of school closures in Germany in 2020. They carried out an online survey collecting 1,313 responses. Their findings revealed that most home-working parents took the first wave of school closures quite positively, despite having to deal with work-school challenges. They even stated better well-being due to more family activities. However, work-school challenges were also sources of more family conflicts. These findings indicated that the productivity of homeworkers may be potentially challenged by family matters, including child care.

Innstrand *et al.* (2022) surveyed employees of one insurance company in Norway to learn about their experience with WFH during the COVID-19 pandemic. They used two samples of responses collected in December 2020 (N = 558) and March 2021 (N = 601). They confirmed that the main reason for surveyed employees to work from home during the pandemic was the need to eliminate social contacts and prevent the spread of coronavirus infection. Most of the surveyed employees challenged difficult times, but they generally enjoyed better work-life balance due to time savings. They also expressed a desire to work from home more in the future, but mostly part-time to keep social interactions. Schifano *et al.* (2023) compared the well-being of people working from home and working in the workplace during the first month of the COVID-19 pandemic using a sample of more than 9,700 individuals from five European countries (Germany, France, Spain, Italy, and Sweden) surveyed from May to November 2020. They revealed lower well-being of people working from home caused by feelings of loneliness and depression mainly due to limited social interactions. They confirmed that WFH is not suitable for every individual.

From the Czech perspective, researchers were interested in the benefits and barriers of WFH during the COVID-19 pandemic (Kucera *et al.*, 2021), commuting behavior of employees beyond the pandemic (Kogus *et al.*, 2022), or the employee attitudes to WFH (Beno *et al.*, 2023). Namely, Sladka and Kreidl (2022) examined the effect of WFH on work-family conflicts by analyzing data from the Czech Generations and Gender Survey (GGS) Covid Pilot Study carried out from December 2020 to February 2021 and covering over 1,300 respondents. Their findings confirmed a negative association between WFH and work-family conflicts. Respondents stated difficulties in achieving work-family balance. The findings revealed that WFH represents a potential stressor challenging work-family balance. Beno *et al.* (2023) analyzed the perspective of Czech employees on WFH reflecting their COVID-19 pandemic experience by surveying 150 employees. Their findings revealed that more employees work from home at their request than at the request of their employer. The most common motives of employees to work from home included the absence of commuting, more flexibility, and less disturbing factors.

To conclude the literature review, WFH is explained as an alternative work pattern allowing employees to work part-time or full-time outside the employer's workplace using ICT (Allen *et al.*, 2015). WFH can benefit both employees and employers. Employees may improve their work-life balance and achieve cost and time savings. Employers may increase employee productivity and reduce employment costs (Vander Elst *et al.*, 2020). Common WFH difficulties for both employees and employers include communication rules and channels, working hours' schedule, productivity standards, technical support, and social isolation (Kucera *et al.*, 2021). All the benefits and difficulties of WFH have been fully realized during the coronavirus pandemic (Aczel *et al.*, 2021).

The coronavirus pandemic has allowed various organizations to learn which of their processes and activities could be performed from home (Yang *et al.*, 2021). WFH has been introduced in professions where it was originally considered impossible, and it is predicted that people will continue working from home more and more (Vander Elst *et al.*, 2020). The desire to work from home may depend on various factors, such as profession, age, family, or experience (Georgescu *et al.*, 2021). The probability of continuing WFH seems to be more likely among people experiencing greater productivity and working at the middle and lower levels of the organization in such industries as ICT, consulting, or administration (Wong

et al., 2021). The benefits of WFH for both employees and employers may encourage further use of WFH. However, there are also issues of WFH concerning work-personal-family well-being and thus job satisfaction and productivity of people working from home. These are the issues concerned by this article considering the experience of employees in the Czech Republic and elsewhere.

Research methods

The analysis of the experience of employees in the Czech Republic with WFH during the coronavirus pandemic is founded on data from the authors' online questionnaire survey carried out from December 2021 to September 2022. Responses were obtained from 480 respondents who experienced WFH as employees during the coronavirus pandemic in the Czech Republic.

Table 1 states the characteristics of respondents by industry (administrative activities; banking, finance, and insurance; ICT; public administration; manufacturing; wholesale and retail), age (25 or less; 26–39; 40 or more), and gender (female; male). Respondents worked mostly in administrative activities, least in ICT. Respondents were most often aged 40 or more, however, the mean age was 36 (the median age was 34). There were roughly twice as many female respondents as male respondents.

The online questionnaire was created in Google Forms and respondents received a link to it via email. In addition to multiple-choice questions about the respondents' industry, age, and gender, it contained a total of twenty multiple-choice questions regarding the respondents' employment during the coronavirus pandemic. From these questions, ten questions concerning the respondents' experience with WFH during the coronavirus pandemic were selected to be analyzed in this article. The questions and responses are provided in the annex (see Tables 2–11). Particular questions allowed respondents to select one or more options from a list of answers. Respondents were asked about (1) their concerns about losing their jobs due to the coronavirus pandemic, (2) changes in their work arrangement due to the coronavirus pandemic, (3) their readiness to work from home during the coronavirus pandemic, (4) the benefits of WFH, (5) the difficulties of WFH, (6) the skills needed to work from home, (7) the conditions needed to work from home, (8) the ICT they use while working from home,

(9) the organizational and technical support of WFH provided by the employer, and (10) their desire to work from home beyond the coronavirus pandemic.

Using the Microsoft Excel application, the collected data were analyzed through the calculation of relative response rates and the evaluation of responses depending on the industry, age, and gender. Within the analysis, three hypotheses about the dependence of the desire of employees to work from home beyond the coronavirus pandemic on their industry, age, and gender were tested:

H1: *The desire of employees to work from home beyond the coronavirus pandemic depends on their industry.*

H2: *The desire of employees to work from home beyond the coronavirus pandemic depends on their age.*

H3: *The desire of employees to work from home beyond the coronavirus pandemic depends on their gender.*

The hypotheses follow the purpose of the article and the findings of similar research studies. Knowing the determinants of the desire of employees to work from home may help manage the further use of WFH.

Statistical non-parametric methods for the analysis of nominal data were used to test the hypotheses. The desire to work from home beyond the coronavirus pandemic variable was rated on a scale of “yes, full-time”, “yes, part-time”, and “no”. The testing assumed that the tested data were not normally distributed. Neither graphical (a Q-Q Plot, histogram) nor numerical (skewness, kurtosis, a chi-square test) methods of testing the normality of the data confirmed a normal distribution.

The chi-square test of independence for the contingency table (χ^2) was used to verify the dependence of the desire of employees to work from home beyond the coronavirus pandemic on their industry, age, and gender by assessing whether the observed frequencies of responses (O) differ from the theoretical (expected) frequencies of responses (E) corresponding to the null hypothesis (H_0) expressing the assumption that there is no dependence between the analyzed variables (see Formula 1).

$$\chi^2 = \sum \left[\frac{(O_{r,c} - E_{r,c})^2}{E_{r,c}} \right] \quad (1)$$

where:

- χ^2 the calculated value of the chi-square statistic;
- O observed frequencies;
- E expected frequencies;
- r, c the number of rows and columns in the contingency table.

The process of carrying out the chi-square test of independence for the contingency table (χ^2) included the determination of the null (H_0) and alternative (H_A) hypotheses, the determination of the significance level ($\alpha = 0.05$), the calculation of the chi-square statistic (χ^2), and the comparison of the calculated chi-square statistic to the determined critical chi-square value $\chi^2_{\alpha}(f)$. If the chi-square statistic was higher than the critical chi-square value, the null hypothesis (H_0) was rejected in favor of the alternative hypothesis (H_A). To use this test, eighty percent of the contingency table fields must have an expected frequency of responses (E) greater than 5, and no contingency table field must have an expected frequency of responses (E) less than 1. This rule was met in all tested cases.

The Tschuprow's contingency coefficient (T) was used to assess the degree of dependence between the desire of employees to work from home beyond the coronavirus pandemic on their industry, age, and gender in the contingency table. Its calculation (see Formula 2) is founded on the calculated value of the chi-square statistic (χ^2). The coefficient takes on values between 0 and 1 (inclusive), which means that the higher its value, the higher the degree of dependence between the analyzed variables. This coefficient is suitable for contingency tables with a different number of rows and columns.

$$T = \sqrt{\frac{\chi^2}{n(r-1)(c-1)}} \quad (2)$$

where:

- T the calculated value of the Tschuprow's contingency coefficient;
- χ^2 the calculated value of the chi-square statistic;
- n the total frequency in the contingency table;
- r, c the number of rows and columns in the contingency table.

Results

The authors' online questionnaire survey was aimed at employees in the Czech Republic who experienced working from home (WFH) during the coronavirus pandemic accompanied by workplace closures, which may have raised concerns among employees about losing their jobs. Therefore, the first question asked respondents to rate their concerns about losing their job due to the coronavirus pandemic to which 8% of them stated "high" concerns, 5% of them stated "medium" concerns, and 87% of them stated "low" concerns. The 8% of respondents who stated "high" concerns included 92% of female employees mostly aged 26–39 years (54%) or 40 years or more (26%) and mostly performing administrative activities (46%) or working in wholesale and retail (34%). This could prove that middle-aged and older female employees performing medium- and low-skilled jobs are among the vulnerable workforce. Employees in administrative, wholesale, and retail professions are relatively easy to replace, and their job security is often very low, even though many of their tasks and duties can be performed from home.

Following the anti-coronavirus measures, the second question asked respondents about changes in their work arrangement due to the coronavirus pandemic to which 67% of them experienced WFH, 20% of them experienced a reduction in working hours and earnings, 15% of them decided to change their job, 7% of them had to find a new job, 21% of them experienced no changes, and 2% of them experienced other changes, usually more duties than before the coronavirus pandemic. These changes indicate a significant effect of the anti-coronavirus measures on employment opportunities in different industries and professions.

Following the necessity of many people to work from home due to the anti-coronavirus measures, the third question asked respondents about their readiness to work from home during the coronavirus pandemic to which 45% of them stated "complete" readiness, 49% of them stated "adequate" readiness, and 6% of them stated "inadequate" readiness. The 45% of respondents who stated "complete" readiness used to work from home before the coronavirus pandemic and were mostly performing administrative activities (29%) or working in public administration (23%) and banking, finance, and insurance (11%). On the other hand, the 6% of respondents who stated "inadequate" readiness had limited WFH experience and

were mostly performing administrative activities (42%) or working in the manufacturing industry (41%).

Each employee who has been experiencing WFH during the coronavirus pandemic has perceived different benefits and difficulties. Following that, the fourth and fifth questions asked respondents about the benefits and difficulties of WFH. The benefits of WFH stated included time savings (69%), cost savings (58%), work-life balance (52%), self-management (46%), and other benefits (4%), such as more family activities. The difficulties of WFH stated included social isolation (91%), work-family conflicts (62%), unlimited working hours (49%), unsuitable home workplace (38%), inappropriate technical equipment (27%), and other difficulties (2%), such as costs of equipment and operation of the home workplace. These findings confirm the findings of other research studies on WFH.

Following these findings, the sixth and seventh questions asked respondents about the skills and conditions needed to work from home. The skills needed to work from home stated included time management skills (91%), communication skills (89%), self-management skills (85%), decision-making skills (76%), computer skills (74%), and other skills (5%), such as relationship management skills, self-motivation skills, and critical thinking skills. These findings confirm the importance of skills for planning and organizing work-personal-family activities while WFH. The conditions needed to work from home stated included quality communication channels (87%), regular social interactions (85%), clear productivity standards (83%), appropriate technical equipment (65%), a suitable home workplace (59%), and other conditions, such as the compensation of costs associated with WFH. These findings confirm the importance of regular communication and social interactions supported by clear productivity standards and appropriate technical equipment while WFH.

Following the findings about the conditions needed to work from home, the eighth question asked respondents about the ICT they use to work from home. The technologies stated included notebooks (99 %), smartphones (96%), email clients (94%), collaboration applications (91%), text editors (89%), spreadsheets (87%), presentation applications (85%), and other ICT (8%), primarily special software applications. These findings confirm the need for homeworkers to communicate with superiors, co-workers, and other stakeholders. It also confirms the need for homeworkers to be supported by the employer.

Therefore, the ninth question asked respondents whether their employer has provided them with WFH support to which 59% of them stated "yes" and 41% of them stated "no". The 41% of respondents without WFH support were mostly performing administrative activities (32%) or working in wholesale and retail (23%) or public administration (14%). In these industries, WFH support may not be as important as in other mostly knowledge-based industries. However, every homemaker needs WFH support to meet productivity standards.

The job satisfaction and productivity of homeworkers affect their willingness to use WFH as a regular work pattern. Therefore, the tenth and last question asked respondents whether they desire to work from home beyond the coronavirus pandemic to which 8% of them stated "yes full-time", 61% of them stated "yes part-time", and 31% of them stated "no". These 31% of respondents who stated no desire to work from home included 45% of employees aged 40 years or more and mostly working in public administration (51%). Such employees may prefer a more stable work pattern and their work may not allow for WFH. On the other hand, the 8% of respondents who stated a desire to work from home full-time included 40% of employees 25 years or less and mostly working in the manufacturing industry (38%). These young employees may desire more flexibility through WFH, although their work may not allow it. The 61% of respondents who stated a desire to work from home part-time confirmed the general attitude of many employees to work from home enjoying part-time WFH allowing the optimal work-life balance and social interactions.

Within the analysis of the desire of employees to work from home beyond the coronavirus pandemic, hypotheses H1, H2, and H3 were tested that the desire of employees to work from home beyond the coronavirus pandemic depends on their industry (H_{A1}), age (H_{A2}), and gender (H_{A3}) (see Table 12). The null hypotheses were determined as the desire of employees to work from home beyond the coronavirus pandemic does not depend on their industry (H₀₁), age (H₀₂), and gender (H₀₃). Chi-square statistics (χ^2) were calculated and critical chi-square values for the significance level of 0.05 ($\chi^2_{0,05}$) were determined. The chi-square statistic (χ^2) was higher than the critical chi-square value ($\chi^2_{0,05}$) only in the case of industry. In other words, the analysis revealed that the desire of employees to work from home beyond the coronavirus pandemic depends on their industry, not their age or gender. Moreover, the value of Tschuprow's contingency coefficient (T) indicated a medium dependence between the desire of em-

ployees to work from home beyond the coronavirus pandemic and their industry.

Discussion

The analysis of the experience of employees in the Czech Republic with WFH during the coronavirus pandemic allowed uncovering of perceived benefits, difficulties, skills, conditions, and desires concerning WFH and comparing them with the findings of other researchers. Table 13 provides a comparison of the authors' findings with the findings of other research studies on the benefits, difficulties, and implications of WFH associated with the COVID-19 pandemic.

The authors' findings have revealed that most of the surveyed employees confirmed low concerns about losing their jobs due to the coronavirus pandemic, except for mostly the middle-aged and older female employees performing medium- and low-skilled jobs, who belong to the vulnerable workforce (Kong *et al.*, 2022). These findings indicate that job loss is a very serious issue, not only due to the coronavirus pandemic, but also due to other events, and individuals approach it differently, depending on both the industry, as well as age or gender (Dey *et al.*, 2021).

Following the anti-coronavirus measures and the necessity of many people to work from home, most of the surveyed employees confirmed changes in their workplace aimed at the introduction of WFH. The surveyed employees stating an inadequate readiness to work from home included individuals with limited WFH experience and mostly performing administrative activities or working in the manufacturing industry. These findings indicate that WFH requires certain motivation and skills given by experience and that WFH is not suitable for every profession and individual (Bajgar *et al.*, 2021).

The most common benefits and difficulties of WFH perceived by survey employees included time and cost savings, on the one hand, and social isolation and work-family conflicts, on the other hand. These perceived positives and negatives related to WFH are confirmed by other research studies which point out that these factors affect the perceived well-being and thus actual job satisfaction and productivity of homeworkers (compare Canales-Romero & Hachfeld, 2022; Schifano *et al.*, 2023; Sun *et al.*, 2023; Wong *et al.*, 2021). Moreover, the job satisfaction and productivity of

homeworkers are determined by their skills and conditions. The most needed skills and conditions to work from home productively stated by survey employees included time management skills and communication skills, on the one hand, and quality communication channels and regular social interactions, on the other hand. These perceived skills and conditions related to WFH are confirmed by other research studies which demonstrate their positive and negative effects on the productivity of homeworkers (compare Innstrand *et al.*, 2022; Korican Lajtman, 2023; Seinsche *et al.*, 2023).

Other research studies also confirm the desire of many people to work from home beyond the coronavirus pandemic, especially if they had a satisfactory experience with WFH during the coronavirus pandemic (compare Hao *et al.*; 2022; Kitagawa *et al.*, 2021; Wong *et al.*, 2021). Most of the surveyed employees also stated their desire to work from home beyond the coronavirus pandemic, mainly part-time, which appears to provide homeworkers with the perceived well-being needed to enhance their job satisfaction and productivity (Vander Elst *et al.*, 2020). The analysis has revealed that the desire of employees to work from home beyond the coronavirus pandemic depends on their industry (H1), not their age (H2) and gender (H3). The dependence between the desire of employees to work from home and their industry was revealed to be medium. These findings could mean that WFH is not suitable for every industry and that respondents are aware of the opportunities that various industries offer them (Bajgar *et al.*, 2021).

The desire of people to work from home also depends on the WFH support provided by the employer (Aczel *et al.*, 2021). Most of the surveyed employees confirmed WFH support by their employer that should be both organizational and technical (Cuerdo-Vilches *et al.*, 2021). The organizational support should include WFH policies and guidelines related to the working schedule, productivity standards, communication rules, or the reporting system (Yang *et al.*, 2021). The technical support should include suitable ICT such as notebooks, smartphones, email clients, collaboration applications, or the internet connection needed to communicate and cooperate with superiors, co-workers, and other stakeholders while working from home (Allen *et al.*, 2015). On the other hand, increased use of work-related ICT can increase job stress, which can negatively affect job satisfaction and productivity (Pennington *et al.* (2022).

These findings confirm that quality WFH requires support from employers (Kucera *et al.*, 2021) and that the job satisfaction and productivity of homeworkers are determined by their well-being while working from

home (Kitagawa *et al.*, 2021). To successfully use WFH as a regular work pattern, employers should consider all the known pros and cons of WFH and invest in suitable organizational and technical arrangements to benefit from WFH and stay productive and competitive (Dingel & Neiman, 2020).

Following the research findings, three matters concerning a performance agreement, work environment, and self-management are proposed to enhance work-personal-family well-being and thus job satisfaction and productivity of people working from home. Employers who want to use WFH regularly should consider professions and individuals suitable for WFH and establish clear WFH policies and guidelines to use WFH effectively and efficiently with maximum benefits and minimum difficulties for both the employer and employees working from home. Therefore, the first matter proposed is to conclude a performance agreement on WFH between the employer and the employee. It should include performance objectives, standards, deadlines, and other issues related to WFH that can affect the employee's job satisfaction and productivity, including the agreement on equipment for the home workplace and the compensation of costs associated with WFH. The second matter proposed is to ensure a work environment in the home workplace that would meet the individual needs of the employee, but also enable the employee to meet the performance standards required by the employer. Such a working environment should be ensured by the agreement with the employer, including necessary technical equipment, which should be provided by the employer. The third matter proposed is to encourage self-management of the employee working from home. The employee needs to be able to self-plan, self-organize, and self-control WFH activities and achievements, which requires both appropriate skills of the employee and adequate support from the employer.

Implementing the proposed matters concerning WFH should lead to both work-personal-family well-being (De Andres-Sanchez *et al.*, 2023) and job satisfaction and productivity of employees working from home (Mihalca *et al.*, 2021). Generally, WFH should be the choice of employees rather than the decision of the employer, taking into account the skills and needs of employees (De Vos *et al.*, 2018), because, despite benefits, there are also risks, such as overload and stress while working from home (Olsen *et al.*, 2023). Therefore, employees working from home should care about their work-personal-family well-being to stay satisfied and productive (Kaiser *et al.*, 2022).

Conclusions

The workplace closures due to the anti-coronavirus measures have accelerated the use of working from home (WFH) and have fully revealed all its issues that challenge its use beyond the coronavirus pandemic. The article analyzed the experience of 480 employees in the Czech Republic with WFH during the coronavirus pandemic to identify perceived WFH benefits, difficulties, skills, and conditions, assess the desire of employees to work from home, and propose actions for further use of WFH.

The WFH benefits, difficulties, skills, and conditions revealed by the analysis confirmed the findings of other research studies on WFH. Despite perceived social isolation or work-family conflicts, most of the surveyed employees have enjoyed time and cost savings. However, most of the surveyed employees have required quality communication channels and regular social interactions to stay satisfied and productive while working from home. The analysis revealed the dependence of the desire of employees to work from home beyond the coronavirus pandemic on their industry (H1). Most of the surveyed employees stated their desire to work from home beyond the coronavirus pandemic, mainly part-time, which appears to provide them with the work-person-family well-being needed for their job satisfaction and productivity. These findings contribute to the discussion about the further use of WFH. The WFH needs to maintain the job satisfaction and productivity of people working from home by providing them with adequate organizational and technical support. To achieve that, three matters concerning performance agreement, work environment, and self-management are proposed to enhance work-personal-family well-being and thus job satisfaction and productivity of people working from home.

The findings and proposals are limited by the scope of the survey and analysis. The number of respondents is relatively small and includes only respondents within the Czech Republic. Statistical non-parametric methods for the analysis of nominal data were used to test the hypotheses due to a non-normal distribution of the tested data. However, the industries included are typical of most advanced economies, from the manufacturing industry, wholesale, and retail to administrative activities, public administration, banking, finance, and insurance to ICT. This fact could be a guarantee of useful findings about the use of WFH. The findings and proposals bring another view on WFH from an employee perspective useful for all

theorists and practitioners interested in WFH. Further research on WFH should be aimed at WFH policies and guidelines provided by employers to help employees working from home to enhance work-personal-family well-being and thus job satisfaction and productivity.

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Ministry of Education and Science
Republic of Poland

The journal is co-financed in the years 2022–2024 by the Ministry of Education and Science of the Republic of Poland in the framework of the ministerial programme “Development of Scientific Journals” (RCN) on the basis of contract no. RCN/SN/0129/2021/1 concluded on 29 September 2022 and being in force until 28 September 2024.

Annex

Table 1. The characteristics of respondents (N = 480)

Industry		Age		Gender	
Administrative activities	32%	25 or less	30%	Female	69%
Banking, finance, and insurance	9%	26-39	33%	Male	31%
ICT	7%	40 or more	37%		
Public administration	23%				
Manufacturing industry	13%				
Wholesale and retail	18%				

Table 2. Have you been concerned about losing your job due to the coronavirus pandemic? How would you rate your concerns (single option)?

High	8%
Medium	5%
Low	87%

Table 3. How your work arrangement has changed due to the coronavirus pandemic (multiple options)?

I have experienced working from home	67%
I have experienced a reduction in working hours and earnings	20%
I have decided to change my job	15%
I have had to find a new job	7%
Nothing has changed	21%
Other changes	2%

Table 4. How have you been ready to work from home during the coronavirus pandemic (single option)?

Completely	45%
Adequately	49%
Inadequately	6%

Table 5. What are the benefits of working from home (multiple options)?

Time savings	69%
Cost savings	58%
Work-life balance	52%
Self-management	46%
Other benefits	4%

Table 6. What are the difficulties of working from home (multiple options)?

Social isolation	91%
Work-family conflicts	62%
Unlimited working hours	49%
Unsuitable home workplace	38%
Inappropriate technical equipment	27%
Other difficulties	2%

Table 7. What skills are needed to work from home (multiple options)?

Time management skills	91%
Communication skills	89%
Self-management skills	85%
Decision-making skills	76%
Computer skills	74%
Other skills	5%

Table 8. What conditions are needed to work from home (multiple options)?

Quality communication channels	87%
Regular social interactions	85%
Clear productivity standards	83%
Appropriate technical equipment	65%
Suitable home workplace	59%
Other conditions	12%

Table 9. What ICT do you use while working from home (multiple options)?

Notebooks	99%
Smartphones	96%
Email clients	94%
Collaboration applications	91%
Text editors	89%
Spreadsheets	87%
Presentation applications	85%
Other ICT	8%

Table 10. Does your employer provide you with any organizational and technical support while working from home (single option)?

Yes	59%
No	61%

Table 11. Would you like to work from home beyond the coronavirus pandemic (single option)?

Yes, full-time	8%
Yes, part-time	61%
No	31%

Table 12. The dependence of the desire of employees to work from home beyond the coronavirus pandemic on their industry, age, and gender

H _{A1} . The desire of employees to work from home beyond the coronavirus pandemic depends on their industry				
Industry	Yes, full-time	Yes, part-time	No	Σ
Manufacturing	6	32	22	60
Wholesale and retail	2	51	32	85
ICT	6	21	6	33
Banking, finance, and insurance	6	18	18	42
Administrative activities	14	114	24	152
Public administration	6	54	48	108
Σ	40	290	150	480

Chi square statistic $\chi^2 = 43.540$

Critical chi-square value $\chi^2_{0.05}(10) = 18.307$

H₀ was rejected. The desire of employees to work from home beyond the coronavirus pandemic depends on their industry.

Tschuprow's contingency coefficient T = 0.309. The value of T indicates a medium dependence between the desire of employees to work from home beyond the coronavirus pandemic and their industry.

H _{A2} . The desire of employees to work from home beyond the coronavirus pandemic depends on their age				
Age	Yes, full-time	Yes, part-time	No	Σ
25 or less	16	85	42	143
26-39	12	108	40	160
40 or more	12	97	68	177
Σ	40	290	150	480

Chi square statistic $\chi^2 = 9.392$

Critical chi-square value $\chi^2_{0.05}(4) = 9.488$

H₀ was not rejected. The desire of employees to work from home beyond the coronavirus pandemic does not depend on their age.

Table 12. Continued

H ₃ . The desire of employees to work from home beyond the coronavirus pandemic depends on their gender				
Gender	Yes, full-time	Yes, part-time	No	Σ
Male	13	83	54	150
Female	27	207	96	330
Σ	40	290	150	480

Chi square statistic $\chi^2 = 2.538$
Critical chi-square value $\chi^2_{0.05}(2) = 5.991$
H₀ was not rejected. The desire of employees to work from home beyond the coronavirus pandemic does not depend on their gender.

Table 13. The comparison of findings of different research studies on the benefits, difficulties, and implications of WFH associated with the COVID-19 pandemic

	WFH benefits	WFH difficulties	WFH implications
Authors (2024), Czech Republic	Time and cost savings, work-life balance, and self-management.	Social isolation, work-family conflicts, unlimited working hours, and unsuitable home workplace.	Applying performance management, work environment, and self-management practices to enhance work-personal-family well-being and thus job satisfaction and productivity of homeworkers
De Andres-Sanchez <i>et al.</i> (2023), Spain	Work-life balance.	Work overload, isolation, and stress.	Introducing WFH settings enhancing the well-being of homeworkers.
Canales-Romero and Hachfeld (2022), Germany	More family activities and better work-life balance.	Work-school challenges and family conflicts.	Supporting home-working parents in dealing with family matters.
Giovanis and Ozdamar (2022), UK	More autonomy and flexibility.	Worse mental well-being.	Using hybrid arrangements combining WFH and working in the workplace.
Hao <i>et al.</i> (2022), China	Work-family balance.	Mental discomfort.	Analyzing the effect of WFH on the mental health of homeworkers.
Innstrand <i>et al.</i> (2022), Norway	Better work-life balance due to time savings	Social isolation.	Preferring part-time WFH to keep social interactions.
Mohammed <i>et al.</i> (2022), India	Work autonomy.	Work-family conflicts.	Supporting homeworkers in meeting work and family demands.
Kaufman and Taniguchi (2021), USA	Job satisfaction, work-life balance, flexibility, and productivity.	Reduced social interactions, job security, and career opportunities.	Dealing with factors of satisfaction and dissatisfaction of homeworkers.

Table 13. Continued

	WFH benefits	WFH difficulties	WFH implications
Kitagawa <i>et al.</i> (2021), Japan	Better work-life balance and mental health.	Worse communication and lower productivity.	Supporting communication and cooperation of homeworkers.
Wong <i>et al.</i> (2021), Hong Kong	Personal and family well-being.	Unsuitable work environment and technical equipment.	Improving technical and organizational support of homeworkers.