



UNIVERSITY  
OF WARSAW



FACULTY OF  
ECONOMIC SCIENCES

## WORKING PAPERS

No. 28/2023 (435)

# MECHANISMS UNDERLYING THE EFFECTS OF WORK FROM HOME ON CAREERS IN THE POST-COVID CONTEXT

ANNA MATYSIAK  
AGA KASPERSKA  
EWA CUKROWSKA-TORZEWSKA

 **LabFam**

INTERDISCIPLINARY CENTRE  
FOR LABOUR MARKET AND FAMILY DYNAMICS

WARSAW 2023



## Mechanisms Underlying the Effects of Work From Home on Careers in the Post-Covid Context

*Anna Matysiak\*, Agnieszka Kasperska, Ewa Cukrowska-Torzewska*

*Faculty of Economic Sciences, University of Warsaw*

*Corresponding author: a.matysiak@wne.uw.edu.pl*

---

**Abstract:** This article explores how Work From Home (WFH) affects workers' career progression in the post-pandemic context of the United Kingdom, elucidating the mechanisms that drive these outcomes. Using data from the discrete choice experiment fielded between July and December 2022 among 1,000 managers, we show that teleworkers, whether in hybrid or full-time WFH arrangements, face a disadvantageous evaluation by managers compared to their office-based counterparts. The adverse effect of hybrid teleworking is due to the fact that employers consider hybrid workers are less productive than onsite workers. Full-time teleworkers are penalized even if they display the same performance at work as onsite workers. We demonstrate this penalty to be driven by the fact that managers consider full-time teleworkers to be less committed to work than onsite workers. Consistently with past research, we also find that WFH affects workers' careers differently depending on their gender and parental obligations and that managers' assumptions about workers' performance and commitment allow to explain at least some of these differences.

---

**Keywords:** career, experiment, family, gender, promotion, work from home

**JEL codes:** J12, J13, J16, J21

**Acknowledgements:** This research was possible thanks to financial support granted by the Polish National Agency for Academic Exchange (Polish Returns Programme 2019) and the "Excellence Initiative – Research University (2020-2026)" at the University of Warsaw.

## 1. INTRODUCTION

Over the last two decades, developed countries have witnessed a dramatic increase in the incidence of work from home (WFH). This upward trend toward teleworking substantially accelerated during the Covid-19 pandemic. In the UK, where this study is conducted, employees worked from home 1.5 working days on average in spring 2023; similar numbers were reported for the US (Aksoy et al., 2023). WFH is predicted to be a norm in the working lives of many employees who express a large interest in continuing to telework despite a decline in health risks related to Covid-19 infections (Barrero et al., 2021; Ozimek, 2020). The wish to telework is particularly strong among parents who consider WFH as an opportunity for better combining paid work and care (Thompson et al., 2022). Given these developments, there is an urgent need to understand the consequences that WFH may have for the career opportunities of workers. This study pursues this goal by scrutinizing how and why WFH affects workers' career opportunities (promotion, salary increase and access to training) in the late-/post-pandemic context of the UK, taking into account workers' gender and parental status.

Past research on WFH and workers' careers overwhelmingly concerns the pre-pandemic period when WFH was far less common and thus more stigmatizing. Most of this evidence is based on observational data and provides mixed findings, ranging from the negative (Golden and Eddleston, 2020) to positive (Weeden, 2005; Heywood et al., 2007; Arntz et al., 2022) effects of WFH on workers' opportunities for a promotion or salary increase. This research may, however, suffer from sample selection bias. On the one hand, past studies may have produced false positive effects of WFH on workers' careers given that mainly the most productive and best-performing workers might have been granted this flexibility (Glass and Noonan, 2016). On the other hand, they may have overestimated the negative effects of WFH if workers who requested this mode of work were less career-oriented.

Few studies implemented an experimental design in order to overcome the selection issues (Bloom et al., 2015; Fernandez-Lozano et al., 2019; Munsch, 2016; Kasperska et al., 2023; Wang and Chung, 2023). They largely reported the negative effects of WFH on promotion or earnings, but provided no information as to why workers who WFH have poorer career opportunities. Meanwhile, there are at least two channels through which WFH can affect workers' career opportunities. One of them is workers' performance and its perception by employers. Managers may be less willing to reward teleworkers with a promotion or salary increase if they consider them as less productive than office-based workers. This can be due to the fact that teleworkers can be deprived of knowledge exchange (Kurland and Bailey, 1999) or suffer from distractions to work from family members (Demerouti et al., 2014). However, it

is also possible that managers offer teleworkers worse career development opportunities even if they consider them as productive as office-based workers. Such ‘flexibility stigma’ is driven by managers’ belief that paid work should be central in workers’ lives. In this context, asking for flexible work arrangements, such as WFH, implies that workers also have other life goals apart from paid work (for instance family life) and thus signals a lower commitment to work (Blair-Loy, 2005; Vandello et al., 2013).

Exploring how managers perceive workers’ commitment level and performance and how these views translate into the overall perception of teleworkers as employees could also help us understand why WFH implies different career opportunities for women than men and how these differences intersect with workers’ parental obligations. Past research has provided evidence that mothers who request WFH are assessed differently than fathers, but this evidence is mixed and not well understood. For instance, Munsch (2016) found that both mothers and fathers who requested WFH experienced stronger career penalties than childless individuals, but these penalties were weaker for fathers if they requested WFH explicitly for childcare reasons. Fairly opposite findings were established by Kasperska et al. (2023) who found negative effects of WFH for all groups of workers (fathers, childless women and men), but not for mothers. We argue that employers may form differential expectations toward workers’ performance and commitment once they know or suspect that the request was made due to childcare obligations. For instance, employers may expect teleworking parents to perform better at work than parents who work onsite as the former may work longer hours, allocating the time saved on commuting to paid work (Arntz et al., 2022), or work more intensely in exchange for the flexibility they were offered (Kelliher and Anderson, 2010). On the other hand, employers may penalize teleworkers for the request to WFH as such a request suggests they have other, important responsibilities in life apart from paid work. Teleworking fathers may be assessed as not committed to work because they break the ‘ideal worker’ norm which prescribes workers, and men in particular, to be loyal employees whose involvement in paid work is not affected by family obligations (Burnett et al., 2013; Coltrane et al., 2013; Vandello et al., 2013). All in all, we argue that disentangling diverse managerial perceptions of teleworkers’ performance and commitment can provide us with a more nuanced picture of how WFH affects the career opportunities of workers in the context of their gender and parental obligations.

This study contributes to the literature on WFH and workers’ careers in several ways. First, we contribute to the emerging literature on WFH and workers’ careers in the post-pandemic context. While the career consequences of WFH were studied both before (e.g. Glass

and Noonan, 2016, Munsch, 2016, Arntz et al., 2022) and during the pandemic, research for the post-Covid era is only beginning to emerge (Kasperska et al., 2023; Wang and Chung, 2023). In these new post-pandemic circumstances, in which WFH is much more widespread, employers should be more knowledgeable about how this mode of working affects workers' performance and less likely to stigmatize workers who ask for it. It is thus justified to ask whether WFH still exerts a negative influence on workers' career opportunities as it was found before the pandemic.

Furthermore, we not only assess whether WFH has a negative or positive effect on workers' career opportunities, which has been a topic of past research, but also examine the mechanisms behind these effects. To this end, we outline a theoretical framework which integrates economic, sociological and organizational literature on WFH and its effects on workers' performance, flexible work arrangements and workers' stigmatization as well as literature on gender, parenthood and labor market outcomes. We then empirically test the role of two mechanisms, managers' perceptions of work performance and work commitment, in shaping the differential career opportunities of teleworkers and office-based workers. We also investigate how these processes intersect with workers' gender and parenthood status. Therefore, this study provides new insights into the reasons why teleworkers face different career outcomes than office-based workers and offers a basis for designing policies protecting the rights of flexible workers.

Finally, we implement an experimental design which allows us to eliminate the selection issues present in the past studies based on observational data. In this article, we make use of the data from the self-designed conjoint experiment which was preregistered on the Open Science Framework (OSF) and fielded between July and December 2022 among 1,000 managers in the United Kingdom (UK). In the UK, likewise in the US, many employees turned out to be more reluctant to fully come back to the office than in other European countries as the pandemic entered its last phase (Aksoy et al., 2023). In the second half of 2022, when the data was collected, about 35%-40% of workers worked from home. This means the study was conducted in the context of relatively widespread WFH, and rather late into the pandemic or even in the post-pandemic period, as some would argue. The UK governmental guidelines to WFH were lifted in February 2022 and by mid-2022, 88% of the population aged 12+ received at least two doses of the Covid-19 vaccine and 70% were vaccinated with three doses (ONS, 2023). These data suggest that at the time of data collection, the use of WFH was no longer legally enforced or motivated by health precautions, but constituted a new reality.

## 1. THEORETICAL FRAMEWORK

### *2.1. The mechanisms behind career opportunities of teleworkers and office-based workers*

Standard microeconomic theory suggests that workers' productivity or performance at work is one of the important channels through which WFH affects workers' career opportunities. Since productivity is not always easily directly observed, employers may infer it on the basis of their past experience with or knowledge about the work performance of employees who make use of WFH and those who work from the office (theory of statistical discrimination; Phelps, 1972; Arrow, 1973). Thus, WFH should result in better career outcomes (e.g. higher salary, promotion, access to training) if employers consider it to enhance workers' performance. Likewise, it should reduce workers' career opportunities if it is associated with productivity losses.

However, whether WFH improves or reduces work performance remains unclear. On the one hand, there are several reasons why employers may expect WFH to increase work performance. First, by working from home employees can cut down on workplace distractions (Nardi & Whittaker, 2002) and interruptions (Mann et al., 2000; Konradt et al., 2003). Second, the possibility to WFH increases workers' job satisfaction (Fonner & Roloff, 2010; Gajendran & Harrison, 2007), which can further translate into higher productivity (Böckerman and Ilmakunnas, 2012). Teleworkers may also invest more time and energy into work in order to get noticed or compensate their employers for their lack of presence at the workplace consistent with the idea that "kindness should be repaid" (Kelliher and Anderson, 2010; Belmi and Pfeffer, 2015: 39). Some managers even consciously offer employees the possibility to WFH in exchange for longer working hours (Bathini and Kandathil, 2019). Finally, teleworkers may also work harder and longer as they may use the time saved on commuting to work (Arntz et al., 2022) or simply because they are constantly wired to the workplace (Demerouti et al., 2014).

On the other hand, employers have also reasons to expect the WFH to have a negative impact on workers' performance. There is evidence that teleworkers are deprived of consistent communication with colleagues and supervisors and lack informal learning and mentoring opportunities (Kurland & Bailey, 1999), peer interactions (Teo et al., 1998), interpersonal networking (Cooper & Kurland, 2002) and the transfer of implicit knowledge (Raghuram, 1996). These negative consequences of WFH on knowledge exchange and networking may be

particularly pronounced for those who telework extensively and less so among workers who rely on this working mode from time to time (Golden and Eddleston, 2020).

Empirical studies which addressed the role of WFH on workers' performance usually demonstrated positive effects of hybrid teleworking on workers' productivity and working hours and negative effects on attrition (Bloom et al., 2015; Angelici and Profeta, 2023). An exception is the most recent study by Gibbs et al. (2023) who showed a substantial decline in productivity among highly skilled workers in cognitively demanding jobs which require collaboration and creativity. Other studies, based on subjective rather than objective productivity measures, reported increases in workers' productivity during teleworking experience but these positive evaluations were stronger among employees and weaker among managers (Criscuola et al.; 2021, Deole et al., 2023). The latter, in particular, expressed concerns about the long-term consequences of teleworking: they were worried that long-term teleworking may hamper collaboration and knowledge exchange between employees, reduce identification with the corporate culture and harm creativity (Criscuola et al., 2021).

By contrast to economic theory, sociological research presupposes that WFH affects workers' career outcomes not only through managers' perceptions of their performance but also through workplace-related norms. One of the important workplace norms, embedded in the protestant work ethics in the UK and the US, is the work devotion schema which is characterised by putting work at the center of the workers' lives, disregarding personal commitments, such as childcare obligations (Blair-Loy, 2005, Williams et al., 2013). Consistently with this norm (also called 'ideal worker' norm), employees should act as 'ideal workers' and show unquestionable commitment to work, i.e. be always available on employers' requests, provide long working hours and face time (Epstein et al., 1999; Hochschild 1997; Blair-Loy, 2005; Sharone, 2004; Cha, 2013). Workers who violate this norm, for instance by requesting flexible work arrangements, are considered uncommitted to work and risk negative consequences on their career outcomes even if their productivity remains unchanged (Vandello et al., 2013, Lott and Chung, 2016). In this context, a worker's request to WFH is considered a violation of the work devotion schema, and thus should result in career penalties.

All in all, these considerations suggest that the effects of WFH on workers' career opportunities will depend on how managers assess the performance and commitment of teleworkers vs. office-based workers. The higher/lower the managers assess the work performance of teleworkers in contrast to office-based workers the less/more likely they will be to disadvantage the former over the latter in their decisions about promotion, salary increase

or access to training. However, considering the sociological literatures, we can expect that WFH affects workers' career opportunities also via work commitment. Namely, even if managers consider the work performance of office-based workers and teleworkers as identical they may still be more/less likely to favor office-based workers over teleworkers if WFH signals low/high work commitment.

## ***2.2. Gender and parenthood status***

The effect of WFH on career opportunities likely depends on workers' gender and parenthood status. In particular, one can expect that WFH exerts different effects on the work careers of parents than childless individuals because of the childcare obligations the former usually attend to. Furthermore, these effects may further differ by workers' gender due to the differential involvement of women and men in childcare and the persistence of the hegemonic beliefs about men's and women's social roles. All over the developed world, including the UK, women still perform more childcare and housework than men while men spend more time in paid work (Altintas and Sullivan, 2016, McMunn et al., 2020, Olah et al., 2020). There is evidence that gender differences in the labour market outcomes open up around the peak childbearing ages while they hardly exist at the early career stages (Kleven et al., 2019). This is largely because women take over a disproportionate amount of childcare obligations (McMunn et al., 2020; Xue and McMunn, 2021). Even though mothers nowadays are less inclined to withdraw from economic activity than in the past, they still continue taking longer parental leaves (Karu and Tremblay, 2018) and are more likely to reduce working hours after birth than fathers (Matysiak and Cukrowska-Torzewska, 2021). Mothers also more often request flexible work arrangements in order to accommodate paid work to family demands while men more often choose them in order to work longer or to concentrate better at work (Sullivan and Lewis, 2001; Lott and Chung, 2016). In comparison to teleworking fathers, mothers who WFH experience more fragmented working time, stress and tiredness and tend to multitask more frequently (Powell and Craig, 2015). Women are also more often perceived as the main care providers who ought to practice intensive mothering and be always available to attend their children's needs (Hays, 1996). Men, in turn, are still considered as main income providers who are loyal and committed employees, ready to devote long hours to paid work and be always available to meet new work demands (Burnett et al., 2013).

This differential involvement of women and men in childcare and differential beliefs about men's and women's social roles likely shape managers' assessment of work performance



and work commitment of mothers and fathers who request to WFH and consequently affect their decisions about promotion, salary increase and access to training. Given that women take greater responsibility for childcare than men managers are likely to attribute the request for WFH made by a woman (and a mother in particular) to childcare obligations. Such an attribution shall lower a mother's chances for a promotion, salary increase or training as it signals lower work commitment. Managers may also fear a teleworking mother may perform more poorly at work than a mother who works from the office as the former may experience family-related work interruptions and may have difficulties with concentrating at work. In a similar vein, a request for WFH made by a man can be interpreted in line with the hegemonic gender roles as a desire to increase productivity. Such attribution may be particularly strong if a man is a father since he may be considered to be particularly motivated to increase his work effort in order to be able to provide for the family. Managers may be also less worried that a father, compared to a mother, will experience family-to-work spillovers while working from home. All in all, one may expect WFH to exert a negative impact on the career opportunities of mothers and this negative impact is caused by both lower assessment of mothers' work performance and lower evaluation of their commitment to work. In the case of fathers, in turn, one may expect managers to positively assess the work performance and work commitment of teleworking fathers, yielding positive effects of WFH on fathers' career opportunities.

However, other possible scenarios can also take place. Exchange theory suggests that workers who request flexible work arrangements may, in fact, put more effort into work (e.g. work longer hours or more intensely) in exchange for greater flexibility (Kelliher and Anderson, 2010; Felstead and Henseke, 2017). Mothers, who may be particularly keen on working from home in order to better combine paid work and care, may thus be more involved in paid work in exchange for the possibility of telework. There is also evidence that mothers who telework work longer hours as they save time on commuting (Arntz et al., 2022). They may also be more productive as they do not have to worry about arranging childcare in case of unexpected circumstances or simply because they have a better work-life balance (Angelici and Profeta, 2023). Provided that employers acknowledge the higher work effort of teleworking mothers, they will consider them to perform better at work than office-based mothers and this mechanism may weaken or even balance out the negative managerial perceptions about the work commitment of teleworking mothers.

One can also formulate an alternative prediction on the impact of WFH on fathers' career opportunities. This has to do with the growing involvement of men in the family lives (Altintas and Sullivan, 2017). Even though women continue to take longer parental leaves and

are more likely to ask for flexible work arrangements, such requests are also increasingly more often made by men (Geisler and Kreyenfeld, 2011; Duvander et al., 2014). Employers may thus attribute men's request to WFH to be driven not by the desire to work more intensely but by a need to take care of children. In such a case, they may even evaluate fathers who WFH more negatively than teleworking mothers as, by making the request to telework, fathers are more likely than mothers to break the 'ideal worker' norm. A few studies, which have been conducted so far on the career consequences of men's participation in childcare, indeed, suggest that men experience stronger career penalties than women for making use of parental leaves (Rudman and Mescher, 2013; Evertsson, 2016) or asking for flexible work arrangements in order to care for their children (Coltrane et al., 2013; Vandello et al., 2013). It is thus also likely that low managerial assessments of the work commitment of teleworking fathers will affect the career opportunities of teleworking fathers negatively.

### **3. DATA AND METHODS**

#### **3.1. Study design**

We address our research aims by using data from the conjoint experiment with forced choice which has been pre-registered in the OSF. The experiment was run online in the UK between July and December 2022 by an external research company. The participants were paid for participation in surveys in accordance with the rates indicated by the research company.

Conjoint is an example of a factorial survey experiment, which allows for obtaining reliable measures of multidimensional preferences and estimating the causal effects of multiple attributes on hypothetical choices or evaluations (Green and Rao, 1971; Bansak et al., 2021). In conjoint experiments, respondents are presented with different combinations of profile characteristics in the form of a table. A notable advantage of employing conjoint analysis lies in the empirical evidence that fully randomized conjoint designs effectively alleviate social desirability bias when addressing socially sensitive issues (Horiuchi et al. 2019; Bansak et al., 2021). Although we considered also other types of survey experiments, such as vignette experiments, we prioritized conjoint as the first choice for two reasons. First, randomizing attribute order in a vignette experiment, which is important for reducing the social desirability bias, can be challenging due to potential incoherence resulting from grammatical and sentence structure alterations and is rarely practiced in vignette studies (Bansak et al., 2021). Second, Hainmueller et al. (2015) demonstrated that conjoints tend to outperform other experimental techniques (including vignettes) when it comes to external validity. This is due to increased

respondent engagement in tabular conjoint designs as conjoints present information in a more straightforward format than other experimental techniques which causes less strain and fatigue among study participants (Bansak et al., 2021).

In this study, we implemented a forced choice conjoint experiment which means that respondents had to choose one out of two profiles when answering questions measuring outcome variables (rather than for example assess each of them on a scale). We consider such research design to fit well with our research objective which is to explore how managers choose among workers when making promotion-related decisions. Conjoints with forced answers have been also found to have very high external validity and accurately approximate real-world behavior (Hainmueller et al., 2015). We opted for the between-subject design which implies that each participant was confronted with three pairs of workers' profiles. The pairs of workers' profiles were displayed one after the other. Each profile included seven attributes that were randomly assigned to the profiles: working mode, sex, number of children, age, work experience, skills ranking, and performance rating. The randomization of the performance rating was done for half of the pairs of profiles while for the remaining ones, the performance was set to 'not provided' (performance known vs. unknown). Survey participants were asked five questions, placed underneath each pair of profiles, namely which employee they would offer (1) promotion, (2) salary increase (3) training, and which employee they consider (4) more competent and (5) more committed to work. After comparing all 3 pairs of workers' profiles, participants were asked to fill out a survey, which gathered basic information about the participant and his/her organization. The information shown to the participants before they were asked to evaluate the profiles together with the levels of the profile attributes are presented in the Appendix A.

### ***3.2. Study participants***

Our target sample were managers who work in the UK, supervise at least five employees and are employed in occupations, in which work can be performed from home at a rate of at least 50%, as per a study by Dingel and Neiman (2020). The size of the company in which the managers work was set at ten or more workers. The participants were recruited from an online opt-in panel maintained by YouGov. We employed quota sampling in order to achieve a sample that is representative in terms of the size and geographical location of the company, as well as the managers' gender.

We collected data from 1,206 participants who met the above-specified conditions. Out of this sample, we selected only individuals who spent at least 15 seconds evaluating the first

pair of profiles, at least 9 seconds on the second pair and at least 5 seconds on the third pair. These cut-off points were established at the local minima of the response time distribution for each pair of profiles. These distributions turned out to be bimodal and skewed left with the first mode at very low response times, which suggested that a group of respondents provided their evaluations in a very short time and likely with little reflection. Setting the cut-off points at the local minima resulted in a loss of 269 respondents, which left us with 937 participants and 5,622 records of data (937 individuals \* 3 \* 2 profiles that they compare). Out of these 5,622 records, around one-half referred to fictitious workers who were assigned a performance rank (with only positive values, namely exceptional and satisfactory) that was presented to the managers (2,818) while for the remaining ones (2,804) the performance rank remained unknown.

The participants who were included in our sample are mostly 35 years old or older (86%), highly educated (76%), and either childless or with one child (72%) (see Table 1B in Appendix B). Women constitute 38.5% of the sample, which corresponds to the percentage of female managers in the 2019 LFS data for the UK. The sample is dominated by IT specialists, accountants, and engineers (54% in total). They mostly supervise teams of up to 19 employees (78%) and are responsible for making decisions regarding employees' promotion (69.7%), training (54.5%), evaluation (90.4%), and employment conditions, such as pay or contract time (55%). WFH is widely practiced in respondents' teams (see Table 2B in Appendix B): in only 16% of teams no one works from home and in about half of them more than 80% telework from time to time. Finally, around a quarter (23.8%) of the companies are located in London, and the companies are predominantly large – with more than 1,000 employees (40.6%).

### 3.3. Data analysis

Our main explanatory variable is the working mode, which assumes one of the three categories: working fully on-site, working in a “hybrid mode” (two days from home, three days from the office) and “full-time” teleworking (working from home 5 days a week). Our focus is on three outcome variables that describe the career opportunities: (1) promotion, (2) salary increase and (3) training. In all models, we control for the gender of the fictitious workers, their age, work experience, skills and parenthood status (number of children), which we call the basic set of our covariates.

In order to model the data we considered two types of models: simple and conditional logistic regression. Both allow for modelling dichotomous outcomes, but the latter is better suited for modelling hierarchically structured data. Our data is hierarchically structured (with three pairs of profiles evaluated by each respondent). The two models have, however, yielded

very similar results (see Table 1C in Appendix C for a comparison of the two models). We thus opted to rely on the simple logistic regression because, in contrast to the conditional model, it is integrated into the mediation models in Stata 18.0.

We evaluate the effect of WFH on workers' career opportunities, regardless of gender and parenthood status in three steps. First, we examine whether managers' perceptions of workers' performance with respect to the mode of work shape career opportunities of office-based workers and teleworkers (hybrid and full-time). To this end, we regress our outcome variables against the mode of work on the two subsets of the data: the dataset consisting of workers' profiles with unknown performance of workers (2,804 observations) and the dataset containing only workers' profiles with known work performance (2,818 observations). We refer to these models as Models 1a-c (unknown work performance) and Models 2a-c (known work performance), with subscripts a-c denoting models for each of the three outcome variables (promotion, salary increase and training). In all these models we control for the basic set of control covariates and in Models 2a-c we, in addition, account for performance level (always positive). The effects of the working mode on workers' career opportunities estimated from Models 1a-c reflect differences in career opportunities of hybrid workers and full-time teleworkers compared to office-based workers in a situation in which managers do not have information on their work performance and have to make assumptions about it based on their past experience or knowledge. This situation may be close to the real-life circumstances in which perfect information on workers' performance, in particular if they WFH, might be missing. The effects of the working mode on workers' career opportunities estimated from Models 2a-c, in turn, display differences in career opportunities of hybrid workers and full-time teleworkers compared to office-based workers in the 'ideal world' in which managers have perfect information on workers' performance. A comparison of the two sets of models reveals the role of managerial perceptions of the workers' performance in shaping their career opportunities depending on the adopted mode of work. A formal test of whether managerial assumptions about workers' performance matter for career opportunities of employees working from home versus employees working from the office is performed by estimating Models 3a-c (Appendix C, Table 2C). These models are estimated on all data records (including workers' profiles with known and unknown performance) and allow for an interaction between the working mode and a binary variable indicating whether the manager had the information about workers' performance or not. The interaction effect is significant if managers make different

decisions about promotion, salary increase and training of teleworkers and office-based workers depending on whether they have information on workers' performance.

In the second step, we examine whether the potential career rewards or penalties that managers impose on workers who WFH (despite the fact that they show the same performance as the office-based workers), can be explained by managers' differential assessments of workers' commitment to work as hypothesized in past sociological research. To do that we restrict our analyses to observations with known work performance and re-estimate Models 2a-c after adding work commitment among the controls. These models are referred to as Model 4a-c. Additionally, we estimate a similar logit model as Models 2a-c but with the dependent variable work commitment (Appendix C, Table 3C). This model shows how the mode of work impacts employers' perception of workers' commitment. Last but not least, we perform a mediation analysis to formally test what proportion of the differences in career opportunities due to the adopted mode of work is explained by managers' assessment of workers' commitment to work (Imai et al., 2010). We refer to these models as Models 5a-c.

Finally, we explore whether the effects of WFH on workers' career opportunities depend on their gender and parental statuses. To this end, we re-estimate Models 1a-c, 2a-c, 3a-c, 4a-c and 5a-c separately for childless men (N=986), fathers (N=1785), childless women (N=919) and mothers (N=1932). We refer to these models consecutively as Models 6 (unknown work performance), 7 (known work performance), 8 (sample with known and unknown work performance and interaction between mode of work and performance known/unknown), 9 (known work performance with work commitment as a control) and 10 (mediation analysis on sample with known work performance) with subscripts a-c for childless men, d-f for fathers, g-i for childless women and j-l for mothers.

## 4. RESULTS

### *4.1 Workers' performance, WFH and career opportunities*

The effects of WFH on workers' career opportunities are presented in Table 1. It displays the marginal effects of the mode of work on career opportunities, which shows how much higher / lower is the probability of receiving a promotion, salary increase or training for hybrid workers and full-time teleworkers than office-based workers. Under the unknown performance scenario (Panel A Table 1: Models 1a-c), hybrid and full-time teleworkers are significantly less likely to receive promotions and salary increases than office-based workers. These differences are substantial. For instance, the probability of receiving a promotion among full-time teleworkers is nearly 11 percentage points (pp.) lower and among hybrid workers 7.7 pp. lower than among

office-based workers. For salary increases, these differences amount to 9.3 pp for full-time teleworkers and 7.1 pp for hybrid workers. Managers are also less likely to grant training to workers who WFH, but this refers only to full-time teleworkers and not to hybrid workers. Namely, the probability of receiving training by full-time teleworkers is 6.6 pp. lower than among employees working onsite.

These differences in the likelihood of rewarding employees with respect to the mode of working can be partially explained by the differential perception of the work performance of various types of workers by managers. Panel B in Table 1 displays the marginal effects of the mode of work on career opportunities of workers with identical work performance known to employers (Models 2a-c). The findings show that the opportunities for promotion and salary increase for hybrid workers are no longer lower than for onsite workers. This does not concern the full-time teleworkers who continue to be less likely to be rewarded with promotion or salary increases, though their chances to receive training become equally likely as those of onsite workers. A formal test examining whether the changes in the effects observed between Panels A and B of Table 1 are significant was conducted by estimating Models 3a-c, which cover all observations (with known as well as unknown performance) and allow for an interaction between the mode of work and a binary indicator performance known / unknown (see Table 2 C in Appendix C). The interaction term between hybrid work and the performance indicator is positive and significant in the model for promotion and marginally significant ( $p$ -value  $< 0.1$ ) in the model for salary increase. This suggests that managers assume hybrid workers to perform worse at work than office-based workers, which is why these workers are less likely to be chosen for promotion and salary raises. However, once they learn that hybrid and on-site workers display the same performance, these workers are equally often chosen for a promotion or salary increase. Notably, the interaction term between full-time telework and performance indicator is not significant for any of the outcome variables, suggesting that managers' perceptions of workers' performance do not explain the differences in career opportunities between office-based and full-time teleworkers. In other words, managers penalize employees who choose to work from home 5 days per week as they grant them lower opportunities for promotion and salary increases even if they are informed that these employees perform at work equally well as office-based or hybrid workers.

One possibility for which managers penalize full-time teleworkers when making decisions about promotion or salary increases may be that they perceive them as less committed to work than office-based workers even if they know the workers who telework are as productive as those who work from the office. Findings presented in Table 3C in Appendix C

indeed suggest that employers assess the work commitment of office-based workers as significantly higher than the work commitment of hybrid and full-time teleworkers who perform equally well at work. Furthermore, managers' assessment of workers' commitment is strongly positively related to workers' opportunities for a promotion and salary increase and the mode of work becomes insignificant upon the inclusion of work commitment into the models explaining these two career outcomes (Panel C in Table 1). This suggests that managers' assessment of workers' commitment indeed fully explains the differences in the opportunities for promotion and salary increase between office-based workers and full-time teleworkers.

Different findings are observed for the outcome variable training. We already observed no differences in the training opportunities with respect to the mode of work of otherwise identical workers whose performance was known to managers in the models and whose assessed work commitment was not controlled for. The mode of work continues to be an insignificant predictor of training opportunities in the model which controls for work commitment (Panel C Table 1). Interestingly, however, we see that workers who are assessed as more committed to work are less likely to receive training. Work commitment is thus positively related to opportunities for promotion and salary increase but negatively to training opportunities.

**Table 1.** Marginal effects of work from home on granting an employee a promotion, salary increase and training: Models 1a-c, 2 a-c, 4 a-c.

	Promotion	salary increase	training
<b>Panel A. Models on data records with unknown work performance (Models 1a-c)</b>			
<b>Mode of work (ref: office)</b>			
Hybrid	-0.077*** (-3.55)	-0.071*** (-3.28)	-0.001 (-0.06)
Home	-0.107*** (-4.97)	-0.093*** (-4.34)	-0.066** (-2.98)
Observations	2,804		
<b>Panel B. Models estimated on data records with known work performance (Models 2a-c)</b>			
<b>Mode of work (ref: office)</b>			
Hybrid	-0.010 (-0.47)	-0.010 (-0.49)	-0.003 (-0.15)
Full-time telework	-0.101*** (-4.75)	-0.065** (-3.03)	-0.011 (-0.52)



Observations	2818		
<b>Panel C. Models estimated on data records with known work performance and control for commitment (Models 4a-c)</b>			
<b>Mode of work</b> (ref: office)			
Hybrid	0.015 (0.86)	0.012 (0.67)	-0.006 (-0.30)
Full-time telework	-0.020 (-1.11)	0.010 (0.54)	-0.022 (-0.98)
<b>Perceived work commitment</b> (ref. lower)			
higher	0.538*** (31.41)	0.499*** (28.58)	-0.069*** (-3.60)
Observations	2818		

\* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses. All models control for the basic set of covariates as specified in section 3.3.

Next, we perform a mediation analysis to formally test whether managers' assessment of workers' commitment is a significant mediator of the effect of the mode of work on workers' career opportunities and to what extent it explains the differential career opportunities of full-time teleworkers and office-based workers which persist in the sample with known work performance. The findings are presented in Table 2. The table displays the total effect of working mode on career opportunities and its two components: the natural indirect effect, which operates through work commitment, and the natural direct effect, which operates through other mechanisms. The results clearly demonstrate that the effect of the working mode has no direct significant effect on promotion and salary increase but operates nearly entirely through managers' perceptions of workers' commitment. Work commitment also mediates the effect of working mode on training but its mediating effect is far weaker and operates in the opposite direction. Namely, full-time teleworkers would be more likely to receive training than office-based workers if there were no other mechanisms in force that prevent managers from giving training to full-time teleworkers. This would be exactly due to the fact that the full-time teleworkers are perceived as less committed to work than the office-based workers.

**Table 2.** Marginal effects from mediation analysis (mediator: commitment level): the indirect, direct and total effect of mode of work on career opportunities: Models 5a-c

	Promotion	Salary increase	Training
<b>Natural indirect effect</b>			
Hybrid vs Office	0.025* (-2.17)	-0.024* (-2.16)	0.002 (1.18)
Full-time telework vs Office	-0.085*** (-6.54)	-0.081*** (-6.50)	0.020*** (3.5)
<b>Natural direct effect</b>			
Hybrid vs Office	0.015 (0.82)	0.012 (0.65)	-0.005 (-0.25)
Full-time telework vs Office	-0.018 (-0.96)	0.015 (0.8)	-0.032 (-1.4)
<b>Total effect</b>			
Hybrid vs Office	-0.011 (-0.51)	-0.012 (0.56)	-0.003 (-0.15)
Full-time telework vs Office	-0.103*** (-4.81)	-0.067** (-3.13)	-0.012 (-0.52)
Observations	2818	2818	2818

\* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses. All models control for the basic set of covariates as specified in section 3.3.

#### ***4.2. Gender and parenthood***

In the next step, we examine whether the effects of the working mode on career opportunities differ by workers' gender in the context of family obligations. We proceed in three steps similar to what was conducted above. Results are presented in Table 3 (Models 6a-1, 7a-1, 9a-1) and Table 4 which shows findings from the mediation analysis on subgroups (Models 10a-1).

In a situation in which managers have no information on workers' performance all groups of workers but mothers are less likely to be promoted or receive salary increases when they WFH, either on a full-time or hybrid basis (Panel A in Table 3). This finding is consistent with what we found for the total sample (Panel A in Table 1). Furthermore, similarly, as for the total sample, the negative effects of hybrid teleworking observed earlier for childless men, fathers and childless women on promotion and salary increase disappear after workers' performance becomes known to managers (Panel B in Table 3). In case of childless men, fathers and childless women, the interaction effects between hybrid work and performance are large and positive - though not always significant (Appendix C, Table 2C). As before, these findings suggest that the lower likelihood of granting promotion or salary increase to childless men, fathers and childless women who work in a hybrid mode in comparison to those who work onsite stems largely from the fact that managers tend to assume hybrid workers to be less productive. In the case of full-time telework, the negative effects of teleworking on promotion and salary increased observed among childless men, fathers and childless women get weaker when managers know workers' performance. They even disappear entirely in the case of childless women but not in the case of childless men and fathers. Childless men who WFH on a full-time basis continue to face significantly lower opportunities for a salary increase. Similarly, fathers who WFH on a full-time basis have lower chances for promotion. Their lower career opportunities cannot be thus fully attributed to the fact that managers assess full-time teleworkers as less productive. Clearly, some additional mechanisms, such as a lower assessment of workers' commitment, may come into play. Indeed, when we control for work commitment, we observe no penalties for full-time telework among these groups of workers (Panel C in Table 3).

The findings for mothers are different than for the remaining groups of workers. In a situation in which workers' performance is unknown to managers, hybrid teleworking does not seem to lower mothers' promotion or salary opportunities and full-time teleworking exerts negative but insignificant effects on the two outcomes. However, mothers who fully WFH become less likely to be promoted than office-based mothers once managers have the

information on their performance (Panel B in Table 3). The marginal effect of full-time teleworking on salary increase also becomes more negative though it is only marginally significant. These findings suggest that managers expect mothers who WFH on a full-time basis to have higher productivity than office-based mothers. Once managers learn that mothers who WFH perform as well as onsite working mothers, they penalize the former for not being more productive than their office-based counterparts.

Our findings regarding training opportunities are again different than for promotion and salary increase. Previously we found that only full-time teleworkers have poorer access to training than the remaining groups of workers, but these negative effects disappear after managers learn that full-time teleworkers are as productive as hybrid and office-based workers (Table 1). We now learn that these findings mainly hold for full-time teleworking women (both childless as well as mothers) whose performance is not known to managers. Teleworking mothers are less likely to receive training likely because they are considered to perform better at work than office based mothers and thus do not need training. These negative effects of teleworking on access to training turn insignificant though after managers learn that full-time teleworking women have the same productivity as office-based women. For men, no relationship between working mode and access to training is observed.

**Table 3.** Marginal effects of work from home on granting an employee promotion, salary increase and training by workers' gender and parenthood status: Models 5a-l, 6 a-l, 7 a-l.

	CHILDLess MEN			FATHERS		
	promotion	salary increase	training	promotion	salary increase	training
<b>Panel A. Models on data records with unknown work performance (Models 6a-l)</b>						
<b>Mode of work (ref: office)</b>						
Hybrid	-0.140** (-2.75)	-0.118 * (-2.32)	0.015 (0.29)	-0.086* (-2.67)	-0.102* (-2.67)	0.073 (1.86)
Home	-0.166*** (-3.21)	-0.094 (-1.79)	-0.054 (-1.00)	-0.128** (-2.99)	-0.116** (-2.99)	-0.029 (-0.75)
Observations	481			872		
<b>Panel B. Models estimated on data records with known work performance (Models 7a-l)</b>						
<b>Mode of work (ref: office)</b>						
Hybrid	0.001 (0.03)	-0.030 (-0.60)	0.014 (0.28)	0.018 (0.49)	-0.018 (-0.48)	-0.061 (-1.57)
Full-time telework	-0.061 (-1.23)	-0.127* (-2.51)	0.016 (0.30)	-0.083* (-2.25)	-0.047 (-1.27)	-0.01 (-0.27)
Observations	505			913		
<b>Panel C. Models estimated on data records with known work performance and control for commitment (Models 8a-l)</b>						
<b>Mode of work (ref: office)</b>						
Hybrid	0.028 (0.71)	-0.005 (-0.11)	0.011 (0.21)	0.056 (1.74)	0.015 (0.44)	-0.066 (-1.70)
Full-time telework	0.040 (0.99)	-0.035 (-0.79)	0.002 (0.04)	-0.009 (-0.28)	0.019 (0.56)	-0.020 (-0.52)
<b>Perceived work commitment (ref. lower)</b>						
higher	0.53*** (13.12)	0.47*** (11.05)	-0.068 (-1.51)	0.50*** (15.96)	0.45*** (14.07)	-0.069* (-2.02)
Observations	505			913		

Table 3 cont.

	CHILDLESS WOMEN			MOTHERS		
	promotion	salary increase	training	promotion	salary increase	training
<b>Panel A. Models on data records with unknown work performance (Models 5a-l)</b>						
<b>Mode of work (ref: office)</b>						
Hybrid	-0.097 (-1.82)	-0.127* (-2.42)	-0.055 (-1.02)	-0.024 (-0.63)	0.018 (0.48)	-0.56 (-1.45)
Home	-0.117* (-2.26)	-0.101* (-1.97)	-0.106* (-2.03)	-0.047 (-1.29)	-0.061 (-1.66)	-0.093* (-2.47)
Observations	494					
<b>Panel B. Models estimated on data records with known work performance (Models 6a-l)</b>						
<b>Mode of work (ref: office)</b>						
Hybrid	-0.009 (-0.15)	0.022 (0.38)	0.019 (0.34)	-0.037 (-1.04)	-0.006 (-0.16)	0.028 (0.74)
Full-time telework	-0.064 (-1.10)	-0.011 (-0.19)	0.002 (0.03)	-0.151*** (-4.19)	-0.069 (-1.92)	-0.038 (-1.00)
Observations	425			975		
<b>Panel C. Models estimated on data records with known work performance and control for commitment (Models 7a-l)</b>						
<b>Mode of work (ref: office)</b>						
Hybrid	0.001 (0.02)	0.029 (0.61)	0.017 (0.31)	-0.019 (-0.65)	0.013 (0.45)	0.025 (0.67)
Full-time telework	0.021 (0.43)	0.067 (1.36)	-0.011 (-0.18)	-0.075* (-2.52)	0.004 (0.13)	-0.047 (-1.25)
<b>Perceived work commitment (ref. lower)</b>						
higher	0.57*** (13.77)	0.525*** (12.3)	-0.078 (-1.63)	0.57*** (20.07)	0.54*** (18.86)	-0.07* (-2.15)
Observations	425			975		

\* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses. All models control for the basic set of covariates as specified in section 3.3.

As in the case of the full sample, the mediation analysis conducted on subgroups of individuals based on parenthood and gender confirms that the reduced opportunities for promotion and salary increase which full-time teleworkers face in comparison to identically productive onsite workers can be mostly explained by the fact that managers consider teleworkers as less committed to work (Table 4). In fact, an indirect effect of full-time teleworking (which operates through work commitment) on promotion and salary opportunities is visible among all groups of workers, regardless of their gender and parenthood status (top panel of Table 4). In most cases, the lower perceived work commitment nearly entirely explains the worse career opportunities of the full-time teleworkers. The exceptions from this rule are mothers (promotion) in whose case lower perceived work commitment explains only about 50% of their reduced opportunities for promotion due to full-time telework while the remaining 50% remains unexplained. In other words, mothers who WFH 5 days per week are less likely to be promoted than onsite working mothers, partly because managers consider them as less committed to work and partly for other reasons, which our study does not explain.

As before, training constitutes yet another story. Full-time teleworkers, in general, are as likely to receive training as onsite workers. This is, however, largely due to the fact that managers perceive them as less committed and workers with low commitment are more likely to receive training. Such a pattern is clearly visible among fathers, mothers and childless women but not among childless men.

**Table 4.** Marginal effects from mediation analysis: the indirect, direct and total effect of mode of work on career opportunities by workers' gender and parenthood status

	CHILDLESS MEN			FATHERS			CHILDLESS WOMEN			MOTHERS		
	Promotion	Salary increase	Training	Promotion	Salary increase	Training	Promotion	Salary increase	Training	Promotion	Salary increase	Training
<b>Natural indirect effect</b>												
Hybrid vs Office	-0.033 (-1.04)	-0.028 (-1.03)	0.005 (0.81)	-0.036 (-1.92)	-0.035 (1.92)	0.006 (1.14)	-0.012 (-0.38)	-0.011 (-0.38)	-0.000 (-0.29)	-0.018 (-0.86)	-0.016 (-0.86)	0.001 (0.49)
Full-time telework vs Office	-0.075** (-2.95)	- 0.078** (-2.93)	0.005 (0.31)	- 0.088** * (-3.71)	- 0.08** * (-3.70)	0.026* (2.44)	-0.099* (-2.48)	- 0.090* (-2.45)	0.030 (1.72)	0.079** * (-3.58)	0.076** * (-3.54)	0.015 (1.79)
<b>Natural direct effect</b>												
Hybrid vs Office	0.031 (0.8)	-0.003 (-0.08)	0.010 (0.2)	0.054 (1.61)	0.016 (0.48)	-0.068 (-1.74)	0.000 (0)	0.028 (0.58)	0.021 (0.37)	-0.019 (-0.67)	0.012 (0.42)	0.026 (0.7)
Full-time telework vs Office	0.014 (0.31)	-0.048 (-1.01)	0.012 (0.21)	0.005 (0.14)	0.033 (0.96)	-0.037 (-0.93)	0.032 (0.66)	0.075 (1.54)	-0.026 (-0.44)	-0.074* (-2.44)	0.005 (0.17)	-0.053 (-1.4)
<b>Total effect</b>												
Hybrid vs Office	-0.002 (-0.04)	-0.031 (-0.63)	0.015 (0.29)	0.018 (0.48)	-0.019 (-0.51)	-0.062 (-1.6)	-0.12 (-0.21)	0.017 (0.3)	0.020 (0.35)	-0.037 (-1.03)	-0.004 (-0.12)	0.028 (0.73)



Full-time telework vs Office	-0.062 (-1.26)	-0.126* (-2.56)	0.016 (0.31)	-0.083* (-2.25)	-0.047 (-1.28)	-0.011 (-0.28)	-0.068 (-1.16)	-0.015 (-0.26)	0.004 (0.06)	- 0.153** *	-0.071* (-1.96)	-0.038 (-1)
Observations	505			913			425			975		

\* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses. All models control for the basic set of covariates as specified in section 3.3.

## 5. Discussion and Conclusions

WFH has been a huge change to how people work and has great potential to remain an integral part of the professional landscape for many employees. In this article, we have sought to understand the mechanisms behind the effect of WFH on workers' careers, taking from various theoretical perspectives and disciplines. We explored the role of managerial perception of employees' performance and commitment levels, in explaining their evaluations of teleworkers as compared to office-based workers, as well as the variations in the effect of WFH on career outcomes depending on one's gender and parental status. Employing an experimental approach has allowed us to determine causal evidence and deal with sample selection issues prevalent in past research on this topic.

Our first finding is that without knowing the workers' job performance managers tend to evaluate teleworkers – both hybrid and full-time - worse than office-based workers. More specifically, they are significantly more likely to promote and give a salary increase to office-based workers than to hybrid and full-time teleworkers. They are also more likely to provide training to office-based workers and hybrid teleworkers as compared to workers who fully WFH. These findings align with existing experimental evidence reporting the negative effects of WFH on career opportunities (Bloom et al., 2015; Fernandez-Lozano et al., 2019; Munsch, 2016, Kasperska et al., 2023; Wang and Chung, 2023).

We also found that these negative effects of WFH on workers' career opportunities can be partly attributed to the fact that managers assume teleworkers to perform worse at work than office-based workers and partly to the fact that they perceive teleworkers to be less committed to work. Assumptions managers make about workers' performance fully explain lower promotion and salary opportunities of hybrid teleworkers in comparison to office-based workers. Once the employer was informed that the performance level of the employee who worked in a hybrid mode was similar to the job performance of an otherwise identical office-based worker, the negative effect of WFH on career outcomes was eliminated. Full-time teleworkers continued, however, to be less likely to be awarded promotions and salary raises than on-site workers (though they gained equal access to training) even if they performed equally well at work as onsite workers. We demonstrated that this lower evaluation of full-time teleworkers is fully explained by the fact that managers assume they are less committed to work. Once we controlled for managers' perceptions of workers' commitment the negative effects of full-time teleworking on workers' career opportunities disappeared.

Our findings are thus consistent with the signalling theory (Spence, 1973). Workplace visibility often serves as a way to signal engagement and work quality, influencing how workers are perceived and impacting career outcomes (Bourdeau et al., 2019). Elsbach et al. (2010) observed that workers demonstrating visibility in the workplace are perceived as reliable and committed. Using 'face time' as a way to evaluate employees is also deemed easier than assessing work outputs (Kossek and Thompson, 2016; Bourdeau et al., 2019). Consequently, employers may use physical presence in the workplace as a basis to assess employee quality, resulting in the devaluation of the work of those with less job visibility, such as home-based workers. In our study, this negative effect is balanced out for hybrid workers when the managers are informed about how productive they are. This finding suggests that employees who adopt a hybrid mode of working but show good job performance have equally high chances of being considered for promotion, salary increase or training as office-based workers with similar characteristics. Demonstrating good job performance does not, however, protect full-time teleworkers who continue to be evaluated worse than office-based workers with the same performance level. Even in the late/post-pandemic context, when WFH is far more common than it used to be before 2020, full-time teleworkers are perceived as fundamentally different from the traditional employee archetype, who follows standard work trajectories and behaviours (Acker, 1990; Dumas and Sanchez-Burks, 2015). This difference lies in the failure to demonstrate work commitment via at least partial visibility in the workplace. As a result, full-time teleworkers become stigmatized as lacking dedication to their work, which, as we show in this study, leads to discriminatory attitudes and adverse career consequences for those who choose flexible work options.

We also examined how managers' evaluation of teleworkers depends on gender and parental status of workers. As long as no information about workers' performance was revealed to employers, we found all groups of teleworkers, except for mothers, to be evaluated negatively in comparison to office-based workers, regardless of the extent of teleworking. Mothers constituted an interesting exception as neither hybrid nor full-time teleworking was found to negatively affect their opportunities for promotion and salary increase as long as employers discovered they do not perform better at work when they telework than when they work onsite (though they were less likely to receive training when working from home on a full-time basis).

The analyses of the mechanisms behind these findings showed that the penalties for WFH among childless men and fathers can be fully explained by managers' assumptions about job performance and work commitment of workers in the way described above, i.e. managers' assumptions about job performance explain penalties for hybrid teleworking while managerial

perceptions of work commitment are responsible for lower career opportunities of full-time teleworkers. Managers seem to be even less restrictive in the case of childless women and, regardless of how much they WFH, employers offer them career development opportunities (in terms of promotion, pay and training) which are equally good as those offered to women working onsite provided that the two groups perform equally well at work. It thus emerges that childless women are not penalized for full-time teleworking provided that they are able to demonstrate the same productivity as women working onsite, while such penalties are imposed on childless men as well as fathers. These findings, even though may seem surprising, are consistent with the findings by Correll et al. (2007) who found that childless women are rated more positively in the hiring process than childless men. The authors of this study propose two explanations of this phenomenon, which may well apply to our findings. The first explanation is related to cultural beliefs that women should have children to be fulfilled. As a result, women who forego childbearing may be considered as exceptionally oriented at paid work and thus their request for WFH may not be treated as a sign of low commitment to work. Having no children in case of men does not, in turn, signal strong attachment to paid work, because men are not perceived as those who should have children to be fulfilled. In fact, in contrast to women, men should provide lots of face time and demonstrate availability to employers as they are most often required to fulfil the 'ideal worker norms' (Williams, 2001). As a result, managers will be more harsh toward childless men requesting WFH than childless women. The second explanation why childless women are least likely to be punished by employers for requesting WFH may be the 'reverse discrimination'. This phenomenon implies that employers may want to maintain 'moral credentials' (Monin and Miller, 2001) and may be less likely to discriminate against childless women as a compensation for the fact that they discriminate against mothers (Correll et al., 2007). In our study, we indeed found that employers discriminate against mothers who WFH and are less eager to grant them promotion or salary increase, especially if they realise that teleworking mothers do not perform at work better than onsite working mothers. Employers may thus compensate women for their discriminatory practices against mothers by presenting a more favourable approach to nonmothers.

As already mentioned, our findings for fathers turned similar as the findings for childless men. Fathers who WFH are penalized and this penalty can be partly explained by managers' assumptions about fathers' performance at work (when it comes to hybrid telework) and fathers' commitment to work (when it comes to full-time teleworking). These findings are against our expectations that managers may consider fathers who request WFH as those who are eager to avoid workplace interruptions and work more intensely because they have to

provide for the family. Instead, managers assume lower job performance of fathers who WFH and penalize them for breaking ‘ideal worker’ norm, especially if they request a full-time WFH. However, we do not find evidence that fathers are penalized for WFH more strongly than childless men, which could be expected given that fathers may ask for WFH to fulfil childcare obligations in contrast to childless men. This finding is thus to some extent consistent with that of Munsch (2016) who even established that the penalty for WFH for fathers is weaker than for childless men and interpreted this finding by the “progressive merit badge”, namely that men who participate in childcare are rewarded for being involved fathers.

The findings for mothers are substantially different from the results for fathers. We found that mothers who WFH have the same career opportunities (salary, promotion, training) as mothers who work onsite. Such a finding was already established on the same data by Kasperska et al. (2023) in the UK, and Wang and Chung (2023) in Singapore. It turns out, however, that teleworking mothers become penalized for WFH once employers learn that they perform at work equally well as office-based mothers. This finding implies that employers expect mothers who WFH to be more productive than onsite working mothers, either because they can allocate the time saved on commuting to work (Arntz et al., 2022) or because they can work more intensely in exchange for the flexibility they were offered (Kelliher and Anderson, 2010). If mothers who WFH do not perform better than on-site working mothers, they are considered to display low commitment to work and thus their career opportunities get substantially reduced. The findings suggest double standards at work, implying that employers expect higher work effort from teleworking mothers than other groups of workers in exchange for the possibility of working from home. Such double standards have been reported before in the literature. For instance, Gorman and Kmec (2007) found that employers impose higher work demands on women than men. Others reported that women are expected to adhere to higher standards at work than men (Hengel, 2022). Our findings are thus consistent with past research which presupposes that women need to meet higher bars in order to be valued in the workplace or their professional environment (Card et al., 2019).

To conclude, our study makes important contributions to existing research on flexible work arrangements and workers’ career opportunities by providing a more nuanced picture of how the use of WFH shapes worker career opportunities. It not only shows that teleworkers continue having lower career opportunities than office-based workers even in the aftermath of the Covid-19 pandemic, but it also provides new insights into the mechanisms behind these lower managerial evaluations of teleworkers. While much of past empirical research on flexible work arrangements and workers’ careers referred to managers’ perceptions of teleworkers

commitment to work in explaining their poorer career opportunities in comparison to office-based workers (Glass and Noonan, 2016, Munsch, 2016; Chung and van der Lippe, 2020) we formally test to what extent managerial perceptions of workers' commitment and to what extent managerial assumptions of workers' productivity are responsible for the fact that teleworkers face worse career opportunities than office-based workers. We demonstrate that both mechanisms play an important role in managerial evaluations of employees. We also show that actually some workers (e.g. mothers in case of our study) may not experience poorer career prospects but this is because employers formulate higher expectations toward them for granting them the possibility to WFH. Childless women, in turn, seem to be in the most advanced situation in comparison to the other groups of workers as they are the only group for whom the request to WFH is not linked to lower work commitment (though productivity concerns are still in force).

Our study is, however, not without limitations, which could be taken into account in future research. Even though it is based on a fairly large sample in comparison to other experimental studies on the topic (namely we were able to interview nearly 1,000 managers who were asked to evaluate nearly 6,000 hypothetical workers' profiles in total), the sample turns out small after we divide it by workers' gender and parental status. As a consequence, due to large errors in the estimates some of our findings for the subgroups of workers remain insignificant at  $p$ -value  $<0.05$ . This problem could be eliminated if a larger sample size was available. It is worth noting, however, that the sample sizes of other experimental studies in the field were even smaller and rarely conducted on employers with substantial supervisory responsibilities, which compromises their external validity (Hainmueller et al., 2015). For instance, Munsch (2016) conducted her study on a sample of 656 adults and Wang and Chung (2023) relied on a sample of 473 employers who supervise at least one employee. We were much more demanding in that respect and collected a sample of employers who supervise teams of at least 5 employees and work in organisations of at least 10 individuals. Future research should aim at larger data collections which allow reaching higher power of the obtained estimates. More research could be done also on how employer and company characteristics, such as organisational culture and norms, moderate the effects of the WFH on workers' careers. While our findings provide first insights into how managers' assessments of workers' performance and commitment shape their career opportunities, one can expect that these effects depend on employers' gender, parental status or gender role attitudes as well as the extent to which WFH is widespread in the company and the organizational support for work and family reconciliation.

**REFERENCES**

- Acker, J. (1990). Hierarchies, jobs, bodies: A theory of gendered organizations. *Gender & society*, 4(2), 139-158.
- Angelici, M., & Profeta, P. (2023). Smart working: work flexibility without constraints. *Management Science*. Online First
- Aksoy, C. G., Barrero, J. M., Bloom, N., Davis, S. J., Dolls, M., & Zarate, P. (2023). Working from Home around the Globe: 2023 Report. <https://wfhresearch.com/wp-content/uploads/2023/06/GSWA-2023.pdf>
- Altintas, E., & Sullivan, O. (2017). Trends in fathers' contribution to housework and childcare under different welfare policy regimes. *Social Politics: International Studies in Gender, State & Society*, 24(1), 81-108.
- Arntz, M., Yahmed, S. B., & Berlingieri, F. (2022). Working from Home, Hours Worked and Wages: Heterogeneity by gender and parenthood. *Labour Economics*, 76, 102169.
- Arrow, K. (1973). The Theory of Discrimination. In: Ashenfelter O. & and A. Rees, eds., *Discrimination in Labor Markets*, Princeton: Princeton University Press, 1.
- Bathini, D. R., & Kandathil, G. M. (2019). An orchestrated negotiated exchange: Trading home-based telework for intensified work. *Journal of Business Ethics*, 154, 411-423.
- Barrero, J.M., Bloom, N. and Davis, S.J. (2021). Why working from home will stick (No. w28731). National Bureau of Economic Research.
- Belmi, P., & Pfeffer, J. (2015). How “organization” can weaken the norm of reciprocity: The effects of attributions for favors and a calculative mindset. *Academy of Management Discoveries*, 1(1), 36-57.
- Bansak, K., Hainmueller, J., Hopkins, D. J., Yamamoto, T., Druckman, J. N., & Green, D. P. (2021). Conjoint survey experiments. *Advances in Experimental Political Science*, 19, 19-41.
- Blair-Loy, M. (2005). *Competing devotions: Career and family among women executives*. Harvard University Press.
- Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2015). Does working from home work? Evidence from a Chinese experiment. *The Quarterly Journal of Economics*, 130(1), 165-218.

- Bourdeau, S., Ollier-Malaterre, A., & Houlfort, N. (2019). Not all work-life policies are created equal: Career consequences of using enabling versus enclosing work-life policies. *Academy of Management Review*, 44(1), 172-193.
- Böckerman, P., & Ilmakunnas, P. (2012). The job satisfaction-productivity nexus: A study using matched survey and register data. *ILR Review*, 65(2), 244-262.
- Burnett, S. B., Gatrell, C. J., Cooper, C. L., & Sparrow, P. (2013). Fathers at work: A ghost in the organizational machine. *Gender, Work & Organization*, 20(6), 632-646.
- Card, D., DellaVigna, S., Funk, P., & Iriberry, N. (2020). Are referees and editors in economics gender neutral?. *The Quarterly Journal of Economics*, 135(1), 269-327.
- Cha, Y. (2013). Overwork and the persistence of gender segregation in occupations. *Gender & society*, 27(2), 158-184.
- Chung, H. & van der Lippe, T (2020). Flexible Working, Work–Life Balance, and Gender Equality: Introduction. *Social Indicators Research* 151: 365–381
- Coltrane, S., Miller, E. C., DeHaan, T., & Stewart, L. (2013). Fathers and the flexibility stigma. *Journal of Social Issues*, 69(2), 279-302.
- Cooper, C. D., & Kurland, N. B. (2002). Telecommuting, professional isolation, and employee development in public and private organizations. *Journal of Organizational Behavior*, 23(4), 511–532.
- Correll, S. J., Benard, S., & Paik, I. (2007). Getting a job: Is there a motherhood penalty?. *American journal of sociology*, 112(5), 1297-1338.
- Criscuolo, C., Gal, P., Leidecker, T., Losma, F., & Nicoletti, G. (2021). The role of telework for productivity during and post-COVID-19: Results from an OECD survey among managers and workers. OECD Productivity Working Papers 31, OECD Publishing. Paris
- Demerouti, E., Derks, D., Ten Brummelhuis, L. L. & Bakker, A. B. (2014) New ways of working, impact on working conditions, work-family balance, and well-being. In: C. Korunka and P. Hoonakker (Eds.) *The impact of ICT on quality of working life*. Springer: Dordrecht, pp. 123–141.



- Deole, S. S., Deter, M., & Huang, Y. (2023). Home sweet home: Working from home and employee performance during the COVID-19 pandemic in the UK. *Labour economics*, 80, 102295.
- Dingel, J. I., & Neiman, B. (2020). How many jobs can be done at home?. *Journal of Public Economics*, 189, 104235.
- Dumas, T. L., & Sanchez-Burks, J. (2015). The professional, the personal, and the ideal worker: Pressures and objectives shaping the boundary between life domains. *The Academy of Management Annals*, 9(1), 803-843.
- Duvander, A. Z. (2014). How long should parental leave be? Attitudes to gender equality, family, and work as determinants of women's and men's parental leave in Sweden. *Journal of Family Issues*, 35(7), 909-926.
- Elsbach, K. D., Cable, D. M., & Sherman, J. W. (2010). How passive 'face time' affects perceptions of employees: Evidence of spontaneous trait inference. *Human Relations*, 63(6), 735-760.
- Epstein, Cynthia F., Carroll Seron, Bonnie Oglensky, and Robert Saute (1999). The part-time paradox: Time norms, professional lives, family and gender. New York: Routledge.
- Evertsson, M. (2016). Parental leave and careers: Women's and men's wages after parental leave in Sweden. *Advances in Life Course Research*, 29, 26-40.
- Felstead, A., & Henseke, G. (2017). Assessing the growth of remote working and its consequences for effort, well-being and work-life balance. *New Technology, Work and Employment*, 32(3), 195-212.
- Fernandez-Lozano, I., González, M. J., Jurado-Guerrero, T., & Martínez-Pastor, J. I. (2020). The hidden cost of flexibility: A factorial survey experiment on job promotion. *European Sociological Review*, 36(2), 265-283.
- Fonner, K. L., & Roloff, M. E. (2010). Why Teleworkers are More Satisfied with Their Jobs than are Office-Based Workers: When Less Contact is Beneficial. *Journal of Applied Communication Research*, 38(4), 336-361.
- Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*, 92(6), 1524-1541.

- Geisler, E., & Kreyenfeld, M. (2011). Against all odds: Fathers' use of parental leave in Germany. *Journal of European Social Policy*, 21(1), 88-99.
- Gibbs, M., Mengel, F., & Siemroth, C. (2023). Work from home and productivity: Evidence from personnel and analytics data on information technology professionals. *Journal of Political Economy Microeconomics*, 1(1), 7-41.
- Glass, J.L., Noonan, M.C. (2016). Telecommuting and Earnings Trajectories Among American Women and Men 1989–2008, *Social Forces* 95(1): 217–250.
- Golden, T. D., & Eddleston, K. A. (2020). Is there a price telecommuters pay? Examining the relationship between telecommuting and objective career success. *Journal of Vocational Behavior*, 116, 103348.
- Gorman, E. H., & Kmec, J. A. (2007). We (have to) try harder: Gender and required work effort in Britain and the United States. *Gender & Society*, 21(6), 828-856.
- Green, P. E., & Rao, V. R. (1971). Conjoint measurement-for quantifying judgmental data. *Journal of Marketing Research*, 8(3), 355-363.
- Hainmueller, J., Hangartner, D., & Yamamoto, T. (2015). Validating vignette and conjoint survey experiments against real-world behavior. *Proceedings of the National Academy of Sciences*, 112(8), 2395-2400.
- Hays, Sharon. (1996). *The Cultural Contradictions of Motherhood*. New Haven, CT: Yale.
- Hengel, E. (2022). Publishing while female: Are women held to higher standards? Evidence from peer review. *The Economic Journal*, 132(648), 2951-2991.
- Heywood, J. S., Siebert, W. S., & Wei, X. (2007). The implicit wage costs of family friendly work practices. *Oxford Economic Papers*, 59(2), 275-300.
- Hochschild, Arlie R. (1997). *The time bind: When work becomes home and home becomes work*. New York: Metropolitan Books.
- Hodges, M. J., & Budig, M. J. (2010). Who gets the daddy bonus? Organizational hegemonic masculinity and the impact of fatherhood on earnings. *Gender & Society*, 24(6), 717-745.
- Horiuchi, Y., Markovich, Z., & Yamamoto, T. (2022). Does conjoint analysis mitigate social desirability bias? *Political Analysis*, 30(4), 535-549.

- Karu, M., & Tremblay, D. G. (2018). Fathers on parental leave: An analysis of rights and take-up in 29 countries. *Community, Work & Family, 21*(3), 344-362.
- Kasperska, A., Matysiak, A., & Cukrowska-Torzewska, E. (2023). Managerial Preferences towards Employees Working from Home: Post-Pandemic Experimental Evidence. WNE Working Paper No. 2023-16).
- Kelliher, C., & Anderson, D. (2010). Doing more with less? Flexible working practices and the intensification of work. *Human Relations, 63*(1), 83-106.
- Kleven, H., Landais, C., & Sogaard, J. E. (2019). Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics, 11*(4), 181-209.
- Kolb, Kenneth H. 2014. *Moral Wages: The Emotional Dilemmas of Victim Advocacy and Counseling*. Berkeley: University of California Press.
- Konradt, U., Hertel, G., & Schmook, R. (2003). Quality of management by objectives, task-related stressors, and non-task-related stressors as predictors of stress and job satisfaction among teleworkers. *European Journal of Work and Organizational Psychology, 12*(1), 61–79.
- Kossek, E. E., & Thompson, R. J. (2016). Workplace flexibility: Integrating employer and employee perspectives to close the research–practice implementation gap. *The Oxford Handbook of Work and Family, 255*, 215-239.
- Kurland, N. B. & Bailey, N. B. K. D. E. (1999). The advantages and challenges of working here, there, anywhere, and anytime. *Organizational dynamics, 28*(2), 53-68.
- Leslie, L. M., Manchester, C. F., Park, T. Y., & Mehng, S. A. (2012). Flexible work practices: a source of career premiums or penalties?. *Academy of Management Journal, 55*(6), 1407-1428.
- Lott, Y., & Chung, H. (2016). Gender discrepancies in the outcomes of schedule control on overtime hours and income in Germany. *European Sociological Review, 32*(6), 752-765.
- Mann, S., Varey, R., & Button, W. (2000). An exploration of the emotional impact of teleworking via computer-mediated communication. *Journal of Managerial Psychology, 15*(7), 668-690.

- Matysiak, A., & Cukrowska-Torzewska, E. (2021). 20. Gender and labour market outcomes. *Research Handbook on the Sociology of the Family*, 329.
- McMunn, A., Bird, L., Webb, E., & Sacker, A. (2020). Gender divisions of paid and unpaid work in contemporary UK couples. *Work, Employment and Society*, 34(2), 155-173.
- Monin, B. & Miller, D. T. (2001). Moral Credentials and the Expression of Prejudice. *Journal of Personality and Social Psychology* 81:33–43.
- Munsch, C. L. (2016). Flexible work, flexible penalties: The effect of gender, childcare, and type of request on the flexibility bias. *Social Forces*, 94(4), 1567-1591.
- Nardi, & Whittaker. (2002). The place of face-to-face communication in distributed work. MIT Press.
- Office for National Statistics (Phelps) (2023). Characteristics of homeworkers, Great Britain: September 2022 to January 2023 <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/characteristicsofhomeworkersgreatbritain/september2022tojanuary2023>
- Oláh, L. S., Vignoli, D., & Kotowska, I. E. (2020). Gender roles and families. *Handbook of Labor, Human Resources and Population Economics*, 1-28.
- Ozimek, A. (2020). The future of remote work. Working Paper Available at SSRN 3638597.
- Phelps, E. S. (1972). The statistical theory of racism and sexism. *The American Economic Review*, 62(4), 659-661.
- Powell, A., & Craig, L. (2015). Gender differences in working at home and time use patterns: Evidence from Australia. *Work, Employment And Society*, 29(4), 571-589.
- Raghuram, S. (1996). Knowledge creation in the telework context. *International Journal of Technology Management*, 11, 859–870.
- Rudman, L. A., & Mescher, K. (2013). Penalizing men who request a family leave: Is flexibility stigma a femininity stigma?. *Journal of Social Issues*, 69(2), 322-340.
- Sharone, Ofer. (2004). Engineering overwork: Bell-curve management at a high-tech firm. In *Fighting for time: Shifting boundaries of work and social life* edited by C. F. Epstein and A. L. Kalleberg. New York: Russell Sage Foundation.
- Spence, M. (1973). Job market signaling. *The quarterly journal of economics*, 87 (3): 355-374.

- Sullivan, C., & Lewis, S. (2001). Home-based telework, gender, and the synchronization of work and family: perspectives of teleworkers and their co-residents. *Gender, Work & Organization*, 8(2), 123-145.
- Teo, T. S., Lim, V. K., & Wai, S. H. (1998). An Empirical Study of Attitudes Towards Teleworking among Information Technology (IT) Personnel. *International Journal of Information Management*, 18(5), 329–343.
- Thompson, R. J., Payne, S. C., Alexander, A. L., Gaskins, V. A., & Henning, J. B. (2022). A Taxonomy of Employee Motives for Telework. *Occupational Health Science*, 6, 149-178.
- Vandello, J. A., Hettinger, V. E., Bosson, J. K., & Siddiqi, J. (2013). When equal isn't really equal: The masculine dilemma of seeking work flexibility. *Journal of Social Issues*, 69(2), 303-321.
- Wang, S., Chung, H. (2023). Flexibility Stigma Against Teleworkers from the Manager Perspective: The Roles of Gender-Parenthood Status and Teleworking Policy Context. ESPAnet conference, September 2023 in Warsaw, Poland.
- Weeden, K. A. (2005). Is there a flexiglass ceiling? Flexible work arrangements and wages in the United States. *Social Science Research*, 34(2), 454-482.
- Williams, J. C., Blair-Loy, M., & Berdahl, J. L. (2013). Cultural schemas, social class, and the flexibility stigma. *Journal of Social Issues*, 69(2), 209-234.
- Williams, J. (2001). *Unbending gender: Why family and work conflict and what to do about it*. Oxford University Press.
- Xue, B., & McMunn, A. (2021). Gender differences in unpaid care work and psychological distress in the UK Covid-19 lockdown. *PloS One*, 16(3), e0247959.

**APPENDIX A****A note shown to the participants before the study:**

Imagine it's the time of an internal review process for the employees in your team. This is the period when promotions, training, salary raises, etc. are decided upon. We will now present you three pairs of workers' profiles, prepared by your HR department based on the in-company (between-workers) evaluation of skills and performance. For each pair of profiles, you will be asked to choose a worker to whom you would give a promotion, training, salary increase, etc. Due to budgeting limits, you can grant some of the benefits to only one of the workers in each pair. Please consider your choices carefully. After evaluating workers' profiles, we will also ask you some questions about yourself and your company. Once you go to the next page, you will not be able to go back.

**The list of attributes and their levels**

<b>Attribute</b>	<b>Level</b>
Sex	Female, Male
Number of children younger than 14 years old in the household	0, 1, 3
Age	38, 40, 41
Whether the employee works from home and the extent of it = working mode	none, 2 days per week, 5 days per week
Full-time work experience in the sector in years	8, 13
The ranking of skills (min 1 and max 5) possessed by the employee	social 2 analytical 5, social 4 analytical 1, social 3 analytical 2
Employee's performance rank	not provided, satisfactory, exceptional

**APPENDIX B****Table 1B. Characteristics of the respondents**

Variable	Mean	Std. Dev.	Variable	Mean	Std. Dev.
<b>Age</b>			<b>Managerial responsibilities (=1 if yes)</b>		
18-34	0.139	0.346	Promotion	0.697	0.46
35-44	0.319	0.466	Training	0.545	0.498
45-54	0.279	0.449	Evaluation	0.904	0.295
55+	0.264	0.441	Employment conditions	0.55	0.498
<b>Tenure (current position)</b>			<b>Occupation</b>		
Less than 5 years	0.314	0.464	Network Manager	0.035	0.184
5-9 years	0.281	0.45	Software Developer or Computer Programmer	0.066	0.249
10-14 years	0.166	0.373	Systems Administrator	0.027	0.161
15-25 years	0.166	0.373	Other IT professional	0.172	0.377
More than 25 years	0.073	0.26	Accountant	0.118	0.323
<b>Education</b>			Financial or business analyst	0.038	0.192
Secondary or less	0.072	0.258	Investment or financial advisor	0.016	0.126
Further (college/6th form/A-levels)	0.17	0.376	Retail or personal banker/loan officer	0.016	0.126

Higher (undergraduate, postgraduate)	0.759	0.428	Other Finance professional	0.078	0.268
<b><i>Sex (=1 if female)</i></b>	0.385	0.487	Recruiter	0.011	0.103
<b><i>Number of children</i></b>			Other HR Professional	0.047	0.212
0 (no children)	0.335	0.472	Sales support / Account Manager	0.049	0.216
1 child	0.386	0.487	Artist, graphic artist, visual design specialist	0.012	0.108
2 children	0.21	0.408	Attorney or Lawyer	0.042	0.2
3 and more children	0.068	0.252	Engineer	0.126	0.332
			Management Consultant	0.041	0.197
			Scientific researcher	0.017	0.13
			Writer or journalist	0.012	0.108
			Marketing and related disciplines	0.049	0.216
			Other	0.0288	0.1674
Number of observations	937				



**Table 2B. Characteristics of respondents' team and company**

Variable	Mean	Std. Dev.	Variable	Mean	Std. Dev.
<b>Team</b>					
<b>Department</b>			<b>Number of employees (team)</b>		
Accounting / Finance	0.184	0.387	5-9	0.458	0.498
Administration	0.013	0.113	10-19	0.322	0.468
Business Analytics	0.019	0.137	20-49	0.154	0.361
Customer Relations	0.011	0.103	50-99	0.042	0.2
Engineering	0.1	0.301	>100	0.025	0.155
HR	0.049	0.216	<b>Share of employees who WFH</b>		
IT	0.233	0.423	none	0.162	0.369
Legal	0.037	0.19	<20%	0.112	0.316
Management	0.1	0.301	20%-39%	0.086	0.281
Marketing	0.036	0.187	40%-59%	0.064	0.245
Operations	0.055	0.229	60%-79%	0.07	0.256
Promotion / PR	0.01	0.098	>80%	0.505	0.5
Research and development	0.037	0.19			
Sales	0.055	0.229			
Other	0.06	0.237			
<b>Company</b>					

<b>Region</b>			<b>Sector</b>		
North East	0.029	0.167	Manufacturing	0.11	0.313
North West	0.101	0.302	Electricity, Gas, Steam, and Air Conditioning Supply	0.021	0.145
Yorkshire and the Humber	0.073	0.26	Water Supply; Sewerage, Waste Management	0.011	0.103
East Midlands	0.06	0.237	Construction	0.047	0.212
West Midlands	0.08	0.272	Wholesale and Retail Trade; Repair of motor vehicles	0.038	0.192
East of England	0.073	0.26	Transportation and Storage	0.031	0.173
London	0.238	0.426	Accommodation and Food Service Activities	0.013	0.113
South East	0.145	0.352	Information and Communication	0.142	0.349
South West	0.085	0.28	Financial and Insurance Activities	0.209	0.407
Wales	0.035	0.184	Real Estate Activities	0.013	0.113
Scotland	0.081	0.273	Professional, Scientific and Technical Activities	0.1	0.301
<b>Company size</b>			Administrative and Support Service Activities	0.012	0.108
10 to 19	0.091	0.287	Public Administration and Defense; Compulsory Social Security	0.033	0.179
20 to 34	0.114	0.318	Education	0.036	0.187

35 to 49	0.085	0.28	Human Health and Social Work Activities	0.031	0.173
50 to 99	0.052	0.223	Arts, Entertainment and Recreation	0.028	0.164
100 to 249	0.084	0.278	Other	0.125	0.331
250 to 499	0.084	0.278			
500 to 999	0.083	0.276			
> 1,000	0.406	0.491			
Number of observations	937				

APPENDIX C.

**Table 1C. Comparison of the model estimates from the simple and conditional logit models, odds ratios from models based on sample with unknown work performance (Models 1 a-c)**

	promotion		salary		training	
	logit	conditional logit	logit	conditional logit	logit	conditional logit
<b>Mode of work (ref: office)</b>						
Hybrid	0.706*** (-3.535)	0.716** (-3.269)	0.725** (-3.263)	0.737** (-2.975)	0.994 (-0.06)	0.97 (-0.314)
Full-time telework	0.617*** (-4.92)	0.614** * (-4.845)	0.656** * (-4.302)	0.652** * (-4.257)	0.753** (-2.972)	0.742** (-3.076)
<b>Worker's gender (ref: men)</b>						
Women	1.600*** (5.817)	1.596** * (5.538)	1.632** * (6.05)	1.637** * (5.823)	1.147 (1.735)	1.193* (2.166)
<b>Worker's number of children ( ref: no children)</b>						
1 child	1.073 (0.719)	1.073 (0.695)	1.04 (0.397)	1.039 (0.381)	0.996 (-0.038)	0.978 (-0.227)
3 children	1.071 (0.694)	1.069 (0.651)	1.286* (2.556)	1.302** (2.579)	0.986 (-0.15)	0.987 (-0.136)
<b>Worker's age (ref: 38 years)</b>						
40 years old	1.101 (0.99)	1.119 (1.12)	1.01 (0.105)	1.021 (0.205)	0.893 (-1.18)	0.871 (-1.421)
41 years old	1.146 (1.378)	1.176 (1.567)	1.017 (0.171)	1.033 (0.311)	1 (-0.004)	0.974 (-0.265)
<b>Worker's work experience (ref: 8 years)</b>						

13 years	1.591***	1.628**	1.477**	1.508**	0.729***	0.711**
	(5.762)	(5.813)	(4.84)	(4.896)	(-4.02)	(-4.222)
<b>Worker's skills (ref: social 2, analytical 5)</b>						
social 4, analytical 1	0.215***	0.206**	0.207**	0.197**	3.703***	3.790**
	(-15.161)	(-14.607)	(-15.527)	(-14.88)	(13.341)	(12.967)
social 3, analytical 2	0.393***	0.393**	0.384**	0.385**	2.020***	2.053**
	(-9.491)	(-9.127)	(-9.713)	(-9.304)	(7.333)	(7.308)
Observations	2804					

\* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses.

**Table 2C. Odds ratios of granting an employee a promotion, salary increase and training based on all data records (with known and unknown performance): Models 3a-c and 8a-l.**

	All (Models 3a-c)		
	promotion	salary	training
<b>Mode of work (ref: office)</b>			
Hybrid	0.717*** (-3.442)	0.740** (-3.12)	0.995 (-0.055)
Full-time telework	0.632*** (-4.776)	0.672*** (-4.15)	0.758** (-2.907)
<b>Worker's performance (ref: unknown)</b>			
Known	1.967*** (6.191)	1.947*** (6.116)	0.611*** (-4.696)
<b>Mode of work # Performance known</b>			
Hybrid # Known	1.322* (1.982)	1.284 (1.772)	0.987 (-0.093)
Full-time telework # Known	0.962 (-0.271)	1.084 (0.572)	1.247 (1.611)
<b>Worker's gender (ref: men)</b>			
Women	1.429*** (6.203)	1.450*** (6.455)	1.053 (0.927)
<b>Worker's number of children ( ref: no children)</b>			
1 child	1.104 (1.104)	1.131 (1.131)	0.984 (0.984)
3 children	1.113 (1.525)	1.245** (3.115)	1.011 (0.167)
<b>Worker's age (ref: 38 years)</b>			
40 years old	1.099 (1.345)	0.993 (-0.102)	0.941 (-0.892)
41 years old	1.042 (0.588)	0.94 (-0.886)	1.126 (1.739)
<b>Worker's work experience (ref: 8 years)</b>			
13 years	1.530***	1.347***	0.747***

	(7.389)	(5.192)	(-5.232)
<b>Worker's skills (ref: social 2, analytical 5)</b>			
social 4, analytical 1	0.279***	0.277***	3.432***
	(-17.716)	(-17.833)	(17.687)
social 3, analytical 2	0.459***	0.451***	2.173***
	(-11.074)	(-11.345)	(11.387)
<b>Worker's performance (ref: exceptional)</b>			
satisfactory	0.215***	0.206***	2.405***
	(-18.185)	(-18.725)	(10.993)
Observations	5622		
	<b>Childless men (Models 8a-c)</b>		
	promotion	salary	training
<b>Mode of work (ref: office)</b>			
Hybrid	0.532**	0.581*	1.079
	(-2.725)	(-2.347)	(0.335)
Full-time telework	0.482**	0.676	0.816
	(-3.07)	(-1.676)	(-0.872)
<b>Worker's performance (ref: unknown)</b>			
Known	1.931**	2.367***	0.517**
-	(2.604)	(3.425)	(-2.677)
<b>Mode of work # Performance known</b>			
Hybrid # Known	1.803	1.461	1.011
-	(1.732)	(1.123)	(0.033)
Full-time telework # Known	1.456	0.77	1.33
	(1.075)	(-0.756)	(0.85)
<b>Worker's age (ref: 38 years)</b>			
40 years old	1.092	1.013	0.931
	(0.522)	(0.079)	(-0.44)
41 years old	1.094	0.96	1.055
	(0.511)	(-0.237)	(0.315)
<b>Worker's work experience (ref: 8 years)</b>			
13 years	1.623***	1.279	0.760*
	(3.411)	(1.756)	(-2.011)

<b>Worker's skills (ref: social 2, analytical 5)</b>			
social 4, analytical 1	0.277*** (-7.082)	0.276*** (-7.21)	3.622*** (7.392)
social 3, analytical 2	0.519*** (-3.826)	0.477*** (-4.375)	2.096*** (4.425)
<b>Worker's performance (ref: exceptional)</b>			
satisfactory	0.133*** (-9.582)	0.163*** (-8.787)	4.062*** (7.149)
Observations	986		
	<b>Fathers (Models 8d-f)</b>		
	promotion	salary	training
<b>Mode of work (ref: office)</b>			
Hybrid	0.695* (-2.128)	0.652* (-2.484)	1.351 (1.767)
Full-time telework	0.572** (-3.195)	0.608** (-2.85)	0.873 (-0.787)
<b>Worker's performance (ref: unknown)</b>			
Known	2.061*** (3.775)	2.069*** (3.786)	0.867 (-0.771)
-			
<b>Mode of work # Performance known</b>			
Hybrid # Known	1.581 (1.848)	1.429 (1.432)	0.560* (-2.396)
-			
Full-time telework # Known	1.163 (0.603)	1.315 (1.091)	1.091 (0.361)
<b>Worker's number of children (ref: 1 child)</b>			
3 children	1.051 (0.489)	1.211 (1.866)	0.979 (-0.21)
<b>Worker's age (ref: 38 years)</b>			
40 years old	1.125 (0.94)	0.922 (-0.652)	0.971 (-0.243)
41 years old	1.208 (1.506)	0.895 (-0.88)	1.159 (1.21)
<b>Worker's work experience (ref: 8 years)</b>			



13 years	1.434*** (3.519)	1.263* (2.274)	0.731** (-3.148)
<b>Worker's skills (ref: social 2, analytical 5)</b>			
social 4, analytical 1	0.275*** (-10.06)	0.250*** (-10.72)	3.401*** (9.86)
social 3, analytical 2	0.417*** (-7.06)	0.437*** (-6.7)	2.164*** (6.38)
<b>Worker's performance (ref: exceptional)</b>			
satisfactory	0.214*** (-10.37)	0.207*** (-10.61)	2.192*** (5.61)
Observations	1785		
<b>Childless women (Models 8 g-i)</b>			
	promotion	salary	training
<b>Mode of work (ref: office)</b>			
Hybrid	0.652 (-1.795)	0.569* (-2.368)	0.794 (-0.985)
Full-time telework	0.585* (-2.317)	0.612* (-2.125)	0.637* (-1.978)
<b>Worker's performance (ref: unknown)</b>			
Known	1.236 (0.755)	1.112 (0.379)	0.463** (-2.791)
-			
<b>Mode of work # Performance known</b>			
Hybrid # Known	1.405 (0.967)	1.84 (1.728)	1.391 (0.952)
-			
Full-time telework # Known	1.258 (0.651)	1.493 (1.133)	1.59 (1.328)
<b>Worker's age (ref: 38 years)</b>			
40 years old	1.323 (1.628)	1.305 (1.544)	0.99 (-0.059)
41 years old	1.038 (0.216)	1.111 (0.615)	0.995 (-0.029)
<b>Worker's work experience (ref: 8 years)</b>			
13 years	1.777***	1.538**	0.636**

	(4.083)	(3.045)	(-3.252)
<b>Worker's skills (ref: social 2, analytical 5)</b>			
social 4, analytical 1	0.294***	0.258***	3.464***
	(-6.954)	(-7.624)	(7.13)
social 3, analytical 2	0.571***	0.529***	2.118***
	(-3.329)	(-3.782)	(4.527)
<b>Worker's performance (ref: exceptional)</b>			
satisfactory	0.383***	0.337***	2.099***
	(-4.608)	(-5.171)	(3.609)
Observations	919		
	<b>Mothers (Models 8 j-l)</b>		
	promotion	salary	training
<b>Mode of work (ref: office)</b>			
Hybrid	0.91	1.089	0.784
	(-0.558)	(0.504)	(-1.458)
Full-time telework	0.822	0.774	0.666*
	(-1.192)	(-1.572)	(-2.494)
<b>Worker's performance (ref: unknown)</b>			
Known	2.411***	2.153***	0.531***
-	(4.612)	(4.06)	(-3.528)
<b>Mode of work # Performance known</b>			
Hybrid # Known	0.919	0.904	1.454
-	(-0.347)	(-0.412)	(1.587)
Full-time telework # Known	0.583*	0.934	1.263
	(-2.232)	(-0.285)	(1.002)
<b>Worker's number of children (ref: 1 child)</b>			
3 children	0.957	0.998	1.073
	(-0.451)	(-0.019)	(0.736)
<b>Worker's age (ref: 38 years)</b>			
40 years old	0.987	0.921	0.896
	(-0.111)	(-0.677)	(-0.937)
41 years old	0.895	0.906	1.18
	(-0.922)	(-0.82)	(1.425)

<b>Worker's work experience (ref: 8 years)</b>			
13 years	1.490*** (4.046)	1.399*** (3.411)	0.804* (-2.286)
<b>Worker's skills (ref: social 2, analytical 5)</b>			
social 4, analytical 1	0.264*** (-10.80)	0.299*** (-9.82)	3.470*** (10.56)
social 3, analytical 2	0.418*** (-7.07)	0.411*** (-7.18)	2.283*** (7.03)
<b>Worker's performance (ref: exceptional)</b>			
satisfactory	0.205*** (-10.926)	0.185*** (-11.656)	2.161*** (5.682)
Observations	1932		

\* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses.

**Table 3C. Odds from the logit model with the dependent variable defined as 1 when a worker is perceived as a committed worker and 0 otherwise.**

	All	Childless men	Fathers	Childless women	Mothers
<b>Mode of work</b> (ref: office)					
Hybrid	0.806* (-2.18)	0.786 (-1.04)	0.722 (-1.859)	0.908 (-0.381)	0.864 (-0.86)
Full-time telework	0.503*** (-6.858)	0.413*** (-3.603)	0.510*** (-3.822)	0.505** (-2.594)	0.540*** (-3.629)
<b>Worker's gender</b> (ref: men)					
Women	1.363*** (3.85)				
<b>Worker's number of children</b> (ref: no children / 1 child)					
1 child	1.341** (2.976)				
3 children	1.495*** (4.05)		1.206 (1.312)		1.023 (0.168)
<b>Worker's age</b> (ref: 38 years)					
40 years old	1.061 (0.597)	1.211 (0.823)	0.847 (-0.96)	1.616 (1.886)	1.007 (0.039)
41 years old	1.078 (0.763)	0.983 (-0.07)	1.087 (0.477)	1.178 (0.66)	1.06 (0.351)
<b>Worker's work experience</b> (ref: 8 years)					
13 years	1.475*** (4.823)	1.485* (2.009)	1.607*** (3.309)	1.364 (1.525)	1.414* (2.528)
<b>Worker's skills</b> (ref: social 2, analytical 5)					

social 4, analytical 1	0.552*** (-5.98)	0.581* (-2.257)	0.395*** (-5.228)	0.69 (-1.476)	0.643** (-2.601)
social 3, analytical 2	0.639*** (-4.573)	0.724 (-1.386)	0.572** (-3.178)	0.726 (-1.309)	0.602** (-3.015)
<b>Worker's performance</b> (ref: exceptional)					
exceptional	3.194*** (14.336)	3.219*** (5.974)	3.483*** (8.614)	2.582*** (4.62)	3.304*** (8.667)
Observations	2818	505	913	425	975

0.1 \* 0.05 \*\* 0.01 \*\*\* 0.001, z-score in parentheses.



UNIVERSITY OF WARSAW

FACULTY OF ECONOMIC SCIENCES

44/50 DŁUGA ST.

00-241 WARSAW

[WWW.WNE.UW.EDU.PL](http://WWW.WNE.UW.EDU.PL)