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Bachelor Thesis (IBEB)

The effect of working from home on job satisfaction

Name student: Jule Riedel

Student ID number: 546030

Supervisor: Rose, J.E.

Second assessor: Hessels, J.

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Abstract

This bachelor thesis examines the effect of working from home on job satisfaction. Two Linear Regression models and two Ordered Logistic Regression models investigate this effect using data from the Dutch LISS panel from 2021 during the COVID-19 pandemic. We control for the variables 'gender', 'overtime', 'age', '(age^2)/100', 'partner', 'number of children', 'education', 'occupation' as well as 'net income, and we find no statistically significant support for a positive effect of WFH on job satisfaction. There are no statistically significant gender differences in the level of job satisfaction for our sample and no support for a positive effect of WFH on the level of satisfaction with working hours. The results suggest however that the increase in satisfaction with working hours is higher for women than for men when working from home.

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Overview of abbreviations

WFH - Working from home

LISS – Longitudinal Internet studies for the Social Sciences

1. Introduction

With the outbreak of the COVID-19 pandemic, the world's offices went remote. The Owl Labs State of Remote Work Report (2020) states that almost 70% of full-time workers in the U.S were working from home (WFH) during the pandemic. This is the largest WFH shift that has ever been observed. 77% of the sampled individuals report that their happiness would increase if they were able to WFH after COVID-19. Half of the people would not return to jobs that do not offer remote work after the pandemic. This indicates that WFH remains relevant after the pandemic. This is also undermined by the fact that firms become more and more likely to implement policies that allow their employees to WFH (Bloom et al., 2015). At the first sight, one can argue that it is mainly interesting for companies to do so as they can reduce costs e.g., lower expenses for employee's travel costs and less spending on office space. But companies realized that they could benefit more. As job satisfaction is associated with the motivation of workers which in return has an impact on worker productivity, the overall company performance is influenced (Aziri, 2011). Thus, this research on the impact of WFH on job satisfaction is relevant for companies as well as for the individual worker and society.

Furthermore, it must be kept in mind that WFH already grew before COVID-19. The newspaper headlines in the U.K. were claiming in 2016 that "the office is dead!" (Financial Times, 2016). Between 2009 and 2019, the share of employed working at least sometimes in the home office increased from 5.2% to 9.0% in the EU (European Union, 2020). The Deloitte Global Millennial and Gen Z Survey (2021) states that the generation of millennials and generation Zs chose flexibility and adaptability as one of the three most critical workforce traits. It is a generation that is used to mobility, the use of technology and that highly values work-life balance. As these generations will make up the largest share of the work force in the future, the research on the effect of WFH on job satisfaction will be highly relevant to the future work environment.

The increase in WFH brings further side effects. Given the variables available in the dataset, this paper focuses on the effect of WFH on satisfaction with working hours and gender differences. First, the satisfaction with working hours is challenged as the office is physically permanently available for home workers. Therefore, it is difficult to take time off from work mentally and avoid making long hours which is commonly equated with productivity and job commitment (Ammons & Markham, 2004). Second, the effect of WFH may differ between males and females. Even though western societies are moving towards gender-equality, women still seem to handle most of the family work in dual-career families, especially in times of crisis such as the COVID-19 pandemic (Strauss, 2020). WFH may facilitate the combination of career-family demands for women.

This paper investigates the following research questions:

1. *Does WFH have a positive effect on job satisfaction?*
2. *If so, are there gender differences in this relationship?*
3. *Does WFH have a negative effect on working hour satisfaction?*

We first describe the theoretical framework of WFH and formulate four hypotheses. In the data section, the dataset from the Dutch LISS (Longitudinal Internet studies for the Social Sciences) panel from 2021, during the COVID-19 crisis, is presented. The methodology introduces the two Linear Regression models and two Ordered Logistic models used to test the four hypotheses. After evaluating the assumptions, we conclude that the results will be based on the OLS models.

The results show that we find no statistically significant support for a positive effect of WFH on job satisfaction. There are no statistically significant gender differences in the level of job satisfaction for our sample and no support for a positive effect of WFH on the level of satisfaction with working hours. The results suggest that the increase in satisfaction with working hours is higher for women than for men when WFH. Lastly, the results are evaluated and linked to the theoretical framework in the conclusion and the limitations are discussed.

2. Theoretical framework

In this paragraph, WFH and job satisfaction are defined and the evolvement of WFH is presented. The positive and negative aspects of WFH appearing in the academic literature are explained as well as the findings on the effect of WFH on satisfaction with working hours. We will introduce the four hypotheses.

2.1 Definitions and background

Following the definition of Kaliski (2007), job satisfaction is a worker's perception of his or her achievement and success on the job. Job satisfaction stands for an enjoyable job in which the individual is enthusiastic and happy and at which the individual is performing well and gets a reward for his or her effort. It directly affects worker productivity and personal well-being. Aziri (2011) summarizes that numerous studies proved a considerably large impact of job satisfaction on work motivation, while the level of motivation influences worker productivity, which in return contributes to the overall company performance.

Given that nowadays people spend a large share of their lifetime working and people desire a fulfilled life, research on the various indicators of employee well-being such as job satisfaction becomes increasingly relevant. Flexible working arrangements of which one is WFH can significantly influence job satisfaction (Wheatley, 2017). The academic research focused mostly on teleworking which is working from any other site than the conventional workplace via information communication technology (ICT) (Timms et al., 2015). Teleworking gives a broader definition as it can be done "anywhere" even though it is often used to describe WFH which limits the work location to home. The common use of the world wide web and new tools for communication (e.g., teleconferencing, meeting platforms, messenger services), as well as digital work environments (e.g. cloud based work platforms, databases), and cheap hardware devices made these new ways of working possible. WFH is also often referred to as remote work which is defined as organizational work independent of organizational norms of space and time (Olson, 1983). Fundamental findings of both telework and remote work offer valuable contributions to the literature on WFH and thus will be used in the following sections.

In the spatial development of work, it is not the first time that WFH plays a significant role. It has been common before the Industrial Revolution. With industrialization, factory and office jobs started to replace homework. The workers of that time expressed the opposite of the challenges faced by today's remote workers, such as the separation from family, fixed time schedules, and being monitored at

work. (Ammons & Markham, 2004). With the technological development and connectivity, the growing tertiary sector, and the shift towards a knowledge economy, our society is experiencing a reverse in the historical flow of workers from home to office, and paid work is becoming mobile (Aziri, 2011; Messenger & Gschwind, 2016). Feldstead and Henseke (2017) find that one-third of the growth in WFH can be explained by compositional factors such as the arising of a knowledge economy and the growth in flexible employment. The residual two-thirds that remain unexplained by their model are not a statistical error but highlight the change of detaching work from place.

Since 2019, many governments issued stay-at-home orders to slow down the transmission of the spreading SARS-CoV-2 virus (Maier & Brockmann, 2020). The temporary lockdowns implied staying at home all day long and excluded only workers of essential industries, such as health care, food, and utilities who were allowed to work on-side (Feng & Savani, 2020). In the Netherlands, the first "work from home guideline" for the whole country was announced on March 12th, 2019, followed by the start of the "intelligent lockdown" on March 15th which included the closing of schools, cafes, restaurants, and sports clubs. Only two years later, on March 15th, 2022, the advice to work from home was removed and since then the government advice to work on-site again. Yet, the home office should remain possible in case the employee faces any worry about health (Business.gov.nl, 2022). Thus, WFH is not mandatory anymore as during the COVID-19 pandemic but based on the positive experience made, it seems to become a new norm for numerous organizations. Furthermore, the Netherlands are known to be a role model in creating working arrangements that support working parents and allow for a good work-life balance (Mainiero & Sullivan, 2005).

The scientific research in the field reveals a contrastive image of the effect of WFH on job satisfaction. On one hand, positive effects such as working distance from stressors in the office, reduced commuting time as well as autonomy and independence may increase the level of job satisfaction (Fonner & Roloff, 2010; Maruyama, Hopkinson & James, 2009). On the other hand, negative effects like work intensification, difficulties switching off, a hard transition from office to home, and isolation may decrease the level of job satisfaction (Felstead & Henseke, 2017; Halford, 2005; Bloom et al., 2015). The effects will be explained more precisely in section 2.2.

Most studies focus on the effect of WFH for families as the most interesting questions seem to evolve for this household category. An especially important mediator for families is the work-life balance. It is defined as an individual's perception of the balance of his or her life roles. This definition refers to the balance between work and the remaining life aspects (Guest, 2002). Given the feminization of the

labor force and the rising expectations for fathers to contribute to child and housework, the work-family conflict has intensified (Nomaguchi, 2009). To illustrate, females in the Netherlands captured 44,05% of total employment in 2020 (OECD, 2022). The combination of family and work obligations can yield to three main conflicts namely the time-based conflict, the strain-based conflict, and the behavior-based conflict (Greenhaus & Beutell, 1985). First, the time-based conflict describes the time allocation between the two roles. WFH allows for time flexibility and schedule control which can reduce the time-based conflict (Ammons & Markham, 2004; Kelly et al.,2014). Second, the strain-based conflict stands for the conflict that stress from fulfilling one role makes it challenging to fulfil the other role. The collusion of home demands with job demands challenges home workers to perform both roles simultaneously which may lead to higher stress levels (Ammons & Markham, 2004). Third, the behaviour-based conflict is the difficulty to combine the two different behaviours required by the two roles. Especially negative mood spill overs between work and family can decrease the level of job satisfaction (Edwards & Rothbard, 2000; Wheatley, 2012). The three conflicts will be classified into advantages and disadvantages in more detail in the following sections. Moreover, several findings for the remaining working population such as singles, individuals with a partner, or other forms of living situations will be presented.

2.2 Differential effect of WFH on job satisfaction

This section first presents the positive and the negative effects of WFH on job satisfaction. Then, the main hypothesis is introduced.

2.2.1 Positive effect of WFH on job satisfaction

From the employee's perspective, one advantage of WFH is the high scheduling flexibility (Wheatley, 2012). Maruyama, Hopkinson and James (2009) classify time flexibility as the most important factor affecting work-life-balance. Time flexibility allows workers to schedule work in hours of minimal family demands and plan breaks or time off for times with the highest family and home obligations (Ammons & Markham, 2004). They find that scheduling flexibility allowed home workers to avoid overlaps between the work and home roles. Kelly et al. (2014) specify that the term "schedule control" is also commonly used as it highlights the individual's freedom to decide over (among others) the timing of their work once apart from the conventional office. This benefit can be classified as a reduction of the time-based conflict of the earlier mentioned three types of conflict between work and family obligations. Regarding the job demands-resources model (Bakker & Demerouti 2007), the flexibility created by WFH serves as a valuable work resource that helps dealing with the job demands and thus

reducing the work-family conflict (Schieman, Glavin & Milkie, 2009). Duxbury, Higgins & Neufeld (1998) find that teleworkers indicate less work-family conflict over time compared to non-teleworkers.

Besides identifying more flexibility and a better balance of the work and personal role as an advantage of WFH, Fonner and Roloff (2010) find that job satisfaction increases with WFH as it allows to work distant from the stressors present in the office such as meetings and interruptions. This implies that employees can concentrate better on their tasks because colleagues or clients do not interrupt as frequently compared to working in the office. Another important advantage is that home workers do not spend any time commuting. The time saved can be used for family and home duties or leisure time (Maruyama, Hopkinson & James, 2009). Additionally, travel costs can be avoided.

Given these positive factors, remote workers overall show higher job commitment, job enthusiasm, and job satisfaction compared to the workers in the conventual office (Felstead & Henseke, 2017). Similarly, Fonner and Roloff (2010) found that individuals who were teleworkers over 50% of the time reported greater job satisfaction compared to their counterparts in the conventional office. In fact, they indicated lower stress levels, less interruptions, disruptions, and other negative influences from the office as well as a better balance of work-life. This hints at autonomy and independence from the office of the home workers, illustrated by the fact that remote workers exchange information less frequently compared to office-based employees. Furthermore, the researchers conclude that teleworkers can avoid multiple distracting and stressful stimuli of the office which yields to greater job satisfaction. Furthermore, Maruyama, Hopkinson and James (2009) find that teleworkers overall express positive perceptions of their work and life and Wheatley (2017) concludes that homeworking has positive effects on job and leisure satisfaction. A highly valuable finding stems from Bloom et al. (2015) who conducted a field experiment in a call centre in Shanghai. The experiment group of home workers reported substantially higher work satisfaction than their counterparts in the conventional office. The researchers highlight that the previous literature with the exemption of Kelly et al. (2014) on workplace flexibility and work-life balance uses case studies and surveys across firms which makes the results questionable due to the non-randomization. Yet, these studies suggest large positive associations of WFH adoption with lower employee turnover and absenteeism.

2.2.2 Negative effect of WFH on job satisfaction

The work-family conflict stands out as the main concern to high job satisfaction when WFH in the scientific research. Coming back to the three types of conflict, an overload of the time- or strain-based role may evolve when additional responsibilities come up (Heck et al., 1995) like during the COVID-19 lockdown when the whole family stayed home. Besides the additional housework such as grocery shopping, cooking, and cleaning, others at home request more time, attention, and affection (Feng & Savani, 2020). The overlap of home demands with job deadlines requires the parents to perform both roles at the same time, which may lead to an increase in stress (Ammons & Markham, 2004). A solution to the higher stress level offers the Boundary Theory or also referred to as Border Theory (Ashforth, Kreiner & Fugate, 2000). The approach suggests individuals to make a clear distinction between the two potentially conflicting roles to avoid boundary issues e.g., clearly defining home office space in the house. However, if no clear boundaries can be established, remote work increases the work-home spill-overs. Especially mood spill overs serve as a considerable causal mechanism connecting work and family (Edwards & Rothbard, 2000). Wheatley (2012) finds negative spill overs between work and life among dual career households, especially encountered by women. For dual career households, it seems to be challenging to successfully balance work and life.

Felstead and Henseke (2017) find that remote work overall increases job satisfaction, but that it comes at the cost of work intensification and hinders the workers to switch off, as predicted by the Border theory. Maruyama, Hopkinson and James (2009) claim that it is not possible to perform paid work and childcare simultaneously when WFH. All findings proving the opposite result assume falsely that remote workers can finance private childcare or use public day cares and after-school care providers. The researchers generally present a much more negative attitude of home workers on the work-family balance, namely that it is perceived as easing the damage experienced by the family arousing from fulfilling work demands and in return easing the work damage borne by fulfilling the family role.

The work-to-family conflict describes how the before-mentioned appearances created by the job interfere with performing the family role. Similarly, the family-to-work conflict captures the demands from the family activities interfering with fulfilling the work responsibilities. The work-to-family conflict and family-to-work conflict are both negatively associated with job satisfaction (Mesmer-Magnus & Viswesvaran, 2005).

Considering the Corona virus regulations which came into effect on short notice and made home office temporarily mandatory, many individuals were confronted with a hard transition from the office to home. Prior research reveals that the relocation from an office location to home is an additional demand for employees as they must manage the move and must adapt to the new environment (Halford, 2005).

The invasion of privacy by monitoring with the use of technology may also considerably lower an employee's job satisfaction. Employers use monitoring techniques as they are concerned that homeworkers misuse their working time. Further threats to high job satisfaction when WFH are lower opportunities for promotion (career stagnation) and training due to poor management practice and the loss of social interaction (Aziri, 2011). After working nine months from home in the experiment conducted by Bloom et al. (2015) in Shanghai, home workers indicated that their initial positive attitude towards the home office has faded due to loneliness. Similarly, teleworkers indicated the feeling of isolation from the office network which is negatively associated with job satisfaction (Kurland & Cooper, 2002). Fonner and Roloff (2010) explain that isolation when WFH evolves by lower levels of communication richness and quality and information sharing. Remote work relies on technology and consequently, low technological affinity may set a barrier to an appropriate communication flow. These positive associations of WFH with the feeling of isolation seem to be more relevant for single households than for families. Gajendran and Harrison (2007) also find that isolation and relational impoverishment are mechanisms for the effect of remote work on job satisfaction. However, the researchers conclude that these negative mediators are outweighed by positive mediators, namely higher autonomy, lower work-life conflict, and improved supervisory relationship quality and thus telework has an overall beneficial effect on job satisfaction.

To conclude, the scientific research on the effect of WFH on the level of job satisfaction finds positive as well as negative effects. Yet, it seems that in total the positive effects outweigh the negative ones and mostly a positive association is found.

Main hypothesis: The higher the number of hours WFH relative to the number of hours worked in the conventional office, the higher the level of job satisfaction.

2.3 Side effects in the relationship between WFH on job satisfaction

This section introduces the findings of the existing academic literature on the effect of WFH on satisfaction with working hours and presents the gender differences of the effects for job satisfaction and satisfaction with working hours. At the end, the sub-hypotheses are presented.

2.3.1 Satisfaction with working hours

The traditional office represents the place where all work activities happen. The home in return was known to be the place distant from work and the job would rarely interrupt the time off. But with the evolvement of WFH, the office fuses with home which makes it especially challenging for skilled white-collar workers to avoid overwork and to take time off from work mentally. As teleworkers constantly have the opportunity to work even though they are not physically in the conventional office, they often find themselves working more hours (Ammons & Markham, 2004). The employers and colleagues may encourage this behaviour further. First, because teleworkers have their office at home, they are easily accessible which the boss may take advantage of by demanding extra or antisocial working hours. The association between commitment and long hours and presenteeism leads to worries about the unrecognition of the management and career stagnation (White et al, 2003). Thus, home workers are motivated to increase the number of hours worked to remain competitive, even though there is a lack of monitoring. This holds as working long hours is commonly equated with productivity and job commitment. It is a competitive advantage to be available permanently and to make long hours, while employers usually perceive working fewer hours per week as negative (Ammons & Markham, 2004). Second, to stay in contact with colleagues who work out of normal hours, the home workers are willing to adjust their schedule accordingly and are accessible for longer hours. Especially ambitious parents seem to be more flexible and work more hours compared to less ambitious parents (Dikker, van Engen & Vinkenburg, 2010). In a sample of homeworkers in the UK, 76% of homeworkers reported longer working hours compared to working in a conventional office (Harris, 2003). No evidence of increased working hours was found by Kelly et al. (2014), in contrast, work hours even declined slightly. A possible explanation presented by the researchers is that mainly salaried, professional workers would work long hours. Felstead et al. (2000) found evidence for the workaholism of remote workers. Bloom et al. (2015) find that employees WFH increased the number of minutes worked during their shifts by 9% compared to working in the office. This increase is mainly explained by the greater convenience at home which led to the home workers reducing the number of breaks, time off, and sick days.

As the dataset used for this thesis includes a variable directly capturing the satisfaction with working hours, sub-hypothesis 1 is formulated as follows:

Sub-hypothesis 1: The higher the number of hours WFH relative to the number of hours worked in the conventional office, the lower the level of satisfaction with working hours.

2.3.2 Gender differences

It stands out that the existing academic literature about the gender differences on the effect of WFH on job satisfaction and the satisfaction with working hours focuses mostly on family households.

During the COVID-19 pandemic, people working in non-essential jobs, and pupils were obliged to stay home. With that, not only the offices went remote but also daycare centers and schools implying that parents also had to take care of their children during work hours. The situation additionally intensified as all family members were present at home all day long which makes it more likely that the household duties increase as everyone eats and plays at home. Additionally, household support and nannies were also officially supposed to stay at home implying that any household support became unavailable and had to be taken over by the family. “In a gender-equal world, the additional housework and childcare created by COVID-19 the lockdown would be equally shouldered by men and women” (Feng & Savani, 2020). However, it seems that in times of crisis women handle most of the family work in dual-career families (Strauss, 2020). This is in line with the Gender Role Theory which classifies women as more likely than men to take the role of a family member as the main part of their identity (Bem, 1993). The Gender Role Theory matches the findings of Maruyama, Hopkinson and James (2009) that men perceive flexibility as a chance to work longer, while women see it as an opportunity to obtain a better work-family balance. The researchers found that women still take over most of the housework and childcare and WFH does not challenge the division of household duties between the gender significantly. Western societies move towards a gender-equivalent culture that is characterized by beliefs detached from the traditional gender roles in which men serve as breadwinners and women as caregivers and homemakers. The gender equivalent culture supports that both women and men fulfill their own life goals and presents the conflict of attributing the desired level of participation to both the work role and remaining role (Lyness & Judiesch, 2014*).* In the Netherlands, female employment increased from 35% in the 1980s to 70% in 2016. This doubling is mainly part-time employment as around 60% of the female employees are employed for less than 30 hours per week (OECD, 2017).

Predominately, women perform a double shift while men remain in their full-time occupations as an employee. The double shift often implies that women scarify their leisure time and thus women are more likely to feel exhausted (Wheatley, 2012). Wight and Raley (2009) found that feminine homeworkers in the U.S. dedicate more time to housework than women working in a conventional workspace. Still, ambitious mothers are willing and manage to fulfil their career ambitions while sustaining their children ambition. A study on a sample of white-collar workers who work full-time at home found that men reported working long hours but did not mind stressors like housework or distraction from family members. Women reported the contrary (Ammons & Markham, 2004). Yet, they and especially women with heavy family demands perceive WFH as an opportunity to balance the role conflict better compared to working in the conventional office. Feng and Savani (2020) find that both men and women indicated investing more time in housework during COVID-19 than before the pandemic, but women increased their time by 27% more than men. The researchers indicate that this finding may be underestimated as men are likely to overreport their housework hours. The researchers found that in dual-career families in the U.S., women did not rate their job satisfaction lower compared to men before the COVID-19 pandemic. However, during the lockdown, women reported lower job satisfaction than men.

Interestingly, even though this difference exists, Wheatley (2012) finds that both men and women report higher job satisfaction when WFH compared to working in an office. This is mainly driven by the satisfaction regarding the working hours, rather than regarding leisure time. This holds especially for women which may be explained by their extensive hours of housework, namely an average of 19.4 hours per week and thus usually is combined with part-time or reduced hours arrangements. In contrast, men on average showed to remain full-time workers when WFH and lower household hours.

Additionally, WFH may redistribute the child and housecare as they are geographically closer. Origo and Pagani (2008) state that the flexibility aspects of working hours flexibility facilitate work and family balance and thus are more likely to increase women's job satisfaction and satisfaction with working hours. Flexible work hour programs significantly increase the job satisfaction of female managers as they facilitate the combination of career-family demands (Scandura & Lankau, 1997). Flexible work hours create a family-friendly environment which leads to the assumption that women are more satisfied with the working hours than men.

To summarize, the relevant research reveals a contrastive image of the effect of WFH for gender differences. Yet, as highlighted by Mirchandani (2000), the argument that WFH offers the chance to combine work and family work for females outweighs the downsides. While women may hold back from taking on a full-time job, WFH makes it possible.

The following sub-hypotheses test the gender differences for both, the effect of WFH on job satisfaction and the satisfaction with working hours:

Sub-hypothesis 2: The increase in the level of job satisfaction is higher for women than for men when WFH.

Sub-hypothesis 3: The increase in the level of satisfaction with working hours is higher for women than for men when WFH.

3. Data

In this paper, we make use of data of the LISS (Longitudinal Internet studies for the Social Sciences) panel administered by CentERdata (Tilburg University, The Netherlands). The LISS panel is a representative sample of Dutch individuals who participate in monthly Internet surveys. The panel is based on a true probability sample of households drawn from the population register. Households that could not otherwise participate are provided with a computer and Internet connection. A longitudinal survey is fielded in the panel every year, covering a large variety of domains including health, work, education, income, housing, time use, political views, values, and personality. Panel members fill out online questionnaires in return for financial compensation. For this thesis, we use the Work and Schooling Study Wave 14 which was completed by the participants between 5th April, 2021 and 25th May, 2021, when the COVID-19 crisis was ongoing in the Netherlands. Furthermore, the matching Background Variables dataset from April 2021 provides additional information about the individual's characteristics e.g., gender. We match the Work and Schooling dataset with the Background Variables data in the statistical program Stata to obtain one complete dataset. Three observations cannot be matched to the background variables, so the final dataset consists of 5,475 observations instead of the full 5,478 respondents of the Work and Schooling Dataset. Next, we are only interested in the paid working individuals and thus we eliminate all individuals who answered "No" to the question "Does the respondent have paid work?". The different motives for choosing unpaid work (e.g., intrinsically motivated) result in potentially systematically different levels of job

satisfaction compared to paid workers. After eliminating all empty replies (indicated by . in the dataset) for the variables used in our analysis, the final sample size consists of 1,823 observations.

3.1 Measures

This paragraph explains how the three main variables of interest 'WFH', 'Job satisfaction' and 'Satisfaction with working hours' are measured. Then, the control variables are introduced.

WFH:

As the hypotheses test the effect of hours WFH compared to hours worked in the conventional office, WFH is measured as a percentage of the total hours worked. To measure the number of total hours worked, we use the variable: 'How many hours per week do (did) you actually work on average in your (last) job?'. To obtain the hours WFH we use the variable: 'From the number of hours ´you work on average per week, how many hours did you work at home in a normal working week?'. Then, we create a new variable in Stata called 'WFH' which is the number of hours WFH divided by the total hours worked. Thus, the WFH variable captures the relationship with the hours worked in the conventional office.

Job satisfaction:

Participants were asked to rate their job satisfaction ("We would like to know how satisfied you are with your work and with certain aspects of your work. - How satisfied are you with your current work?") on a ten-point scale from "0 = not at all satisfied" to "10 = fully satisfied" and "999 = I don't know". All values of 999 are eliminated from the dataset.

Satisfaction with working hours:

Participants were asked to rate their satisfaction with working hours ("We would like to know how satisfied you are with your work and with certain aspects of your work. - How satisfied are you with your working hours?" on a ten-point scale from "0 = not at all satisfied" to "10 = fully satisfied" and "999 = I don't know". All values of 999 are eliminated from the dataset.

Control variables:

The control variables follow the approach of Wheatley (2017) who chose the variables based on the existing literature concerning satisfaction. We control for nine variables in the model to rule out their

confounding effects on the results: 'gender', 'overtime', 'age', '(age^2)/100', 'partner', 'number of children', 'education', 'occupation' and 'net income'. In contrast to Wheatley (2017), this analysis does not construct two separate Ordered Logistic Regressions for each gender because our sample size is significantly smaller. Wheatley's studied sample consists of around 6,500 men and 8,100 women. Splitting the sample into males and females would yield a smaller sample size in each model and thus to potentially low power of the results. Instead, we add gender as a control variable as well as an interaction term with WFH to test the sub-hypotheses. The following paragraphs explain the association of the controls with job satisfaction.

Overtime is associated with job dissatisfaction (Philp & Wheatley, 2011). We derive the variable 'overtime' by dividing the actual number of hours worked by the hours expected in the employment contract. Satisfaction shows a positive correlation with age until the middle part of an individual's life and then diminishes (Khattab & Fenton, 2009). To capture this non-linear relationship between age and job satisfaction and age and satisfaction with working hours, the variables 'age' and '(age^2)/100' are added to the model. Even though the correlation matrix shows that the two variables are highly collinear (Appendix B, Table 7), we keep both variables in the model as the multicollinearity stems from taking the power of the variable 'age' for '(age^2)/100' and the two variables are not our main variable of interest.

The variable 'partner' indicates whether a respondent lives together with a partner and the variable 'number of children' captures the number of living-at-home children in the household of the respondent. Children increase the family demands and thus may reduce job satisfaction and working hour satisfaction (Garcia, Molina & Navarro, 2007). The relationship between the job satisfaction and the satisfaction with working hours and a partner is less clear as a partner can be supportive and increase job satisfaction but may also be seen as a dependent as a partner demands time. Similarly, the effect of education on the job and working hour satisfaction can go in both directions. Higher levels of education are negatively associated with satisfaction as individuals with degrees have high expectations of their careers (Khattab & Fenton, 2009). On the other hand, a degree allows a broader choice of jobs and more challenging jobs which can increase job satisfaction. The levels of education for our variable 'education' follow the categories of Statistics Netherlands. The model controls for the occupation groups to capture the fundamental differences between the jobs with the variable 'occupation'. Lastly, net income is expected to be positively associated with job satisfaction. We eliminate all values of "-13 = I don't know" from the dataset. The variable 'net income' is the personal net monthly income measured in Euros.

In contrast to Wheatley (2017), we exclude the variables 'Housework' and 'Care' as they are unavailable in our dataset. 'Long-term illness or disability' is excluded because it concerns Wheatley's variable 'Satisfaction with life' rather than 'Satisfaction with Job'. Similarly, 'Number of working hours' is left out as it is included in our 'WFH' variable and would thus imply multicollinearity. It is especially dangerous because it concerns our variable of interest 'WFH'.

3.2 Descriptive Statistics

The descriptive statistics of the dataset presented in Table 1 give a first insight into the respondent's demographics and values for our main variables of interest. Job satisfaction has a mean of 7.413 with a standard deviation of 1.437 and the satisfaction with working hours has a mean of 7.571 with a standard deviation of 1.565. As the values lie above the middle of the measuring scale and the standard deviations are small, the individuals in the sample seem to be overall satisfied with their job and their working hours. The individuals in the sample worked on average 29.1% of their total working hours from home with a standard deviation of 3.89%. The sample consists of 47.9% males and 52.1% females. 71.1% of the individuals indicate living without a partner and the mean number of living-at-home children is 0.915 with a standard deviation of 1.122. The mean monthly net income is around 2,212€ with a standard deviation of around 976€.

Table 1. Descriptive statistics for a selection of variables

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Job satisfaction	1,823	7.413	1.437	0	10
Satisfaction with working hours	1,823	7.571	1.565	0	10
WFH	1,823	0.291	0.389	0	1
Overtime	1,823	1.011	0.901	0	28
Female	1,823	0.521	0.500	0	1
Age	1,823	45.242	12.717	16	103
Partner	1,823	0.289	0.454	0	1
Number of children	1,823	0.915	1.122	0	6
Net income	1,823	2,212.355	975.452	0	9,000

Note. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Partner means that the respondent indicated to live with a partner. Female refers to male. Net income is the personal net monthly income measured in €. The complete table including the full set of variables can be found in Appendix A.

4. Methodology

In the following paragraph, the regression models to test the four hypotheses are presented and their assumptions are discussed. The dependent variables, 'Job satisfaction' and 'Satisfaction with working hours' are regressed against 'WFH' and relevant controls. In the two Linear Regression models interactions test for gender differences which are left out in the two Ordered Logistic Regression models.

4.1 Regression equations

The following Model 1 and Model 2 test the first hypothesis: The higher the number of hours WFH relative to the number of hours worked in the conventional office, the higher the job satisfaction. The interaction term β_3 between WFH and gender in the first model tests the third sub-hypothesis: The increase in job satisfaction is higher for women than for men when WFH. The first equation is a Linear Regression model, the second equation is an Ordered Logistic Regression model:

(1) $Job\ satisfaction_i = a_i + \beta_1 WFH + \beta_2 gender + \beta_3 gender * WFH + \beta_4 overtime + \beta_5 age + \beta_6 (age^2/100) + \beta_7 partner + \beta_8 number\ of\ children + \beta_9 education + \beta_{10} occupation + \beta_{11} net\ income + \varepsilon_i$

(2) $\ln(Job\ satisfaction_j) = a_j + \beta_1 WFH + \beta_2 gender + \beta_3 overtime + \beta_4 age + \beta_5 (age^2/100) + \beta_6 partner + \beta_7\ number\ of\ children + \beta_8 education + \beta_9 occupation + \beta_{10} net\ income + \varepsilon_j$

The following Model 3 and Model 4 test the second sub-hypothesis: The higher the number of hours WFH relative to the number of hours worked in the conventional office, the higher the satisfaction with working hours. The interaction term β_3 between WFH and gender in the third model tests the third sub-hypothesis: The increase in satisfaction with working hours is higher for women than for men when WFH. The third equation is a Linear Regression model, the fourth equation is an Ordered Logistic Regression model:

(3) $Satisfaction\ with\ working\ hours_i = a_i + \beta_1 WFH + \beta_2 gender + \beta_3 gender * WFH + \beta_4 overtime + \beta_5 age + \beta_6 (age^2/100) + \beta_7 partner + \beta_8 number\ of\ children + \beta_9 education + \beta_{10} occupation + \beta_{11} net\ income + \varepsilon_i$

(4) $\ln(Satisfaction\ with\ working\ hours_j) = a_j + \beta_1 WFH + \beta_2 gender + \beta_3 overtime + \beta_4 age + \beta_5 (age^2/100) + \beta_6 partner + \beta_7\ number\ of\ children + \beta_8 education + \beta_9 occupation + \beta_{10} net\ income + \varepsilon_j$

4.2 Assumptions Linear Regression

The response variables 'Job satisfaction' and 'Satisfaction with working hours' are ordinal variables as they are naturally ordered from 0 to 10. The scatterplot shows a non-linear relationship between our variable of interest 'WFH' for 'Job satisfaction' and a linear relationship for 'Satisfaction with working hours' (see Appendix B.1, Figure 1.1 & Figure 1.2). Thus, a Linear Regression model is problematic for 'Job satisfaction' because the Linearity Assumption is violated when it is used with this non-continuous outcome variable. Additionally, the Normality Assumption is violated for both linear regression models as the standard errors do not follow a normal distribution (see Appendix B.1, Figure 3.1 & Figure 3.2). We report the results of the Linear Regression models, but the results must be interpreted carefully. For the estimation, we use robust standard errors as the distribution of the standard errors does not show a clear pattern and thus is heteroskedastic (see Appendix B.1, Figure 2.1 & Figure 2.2). The collinearity matrix shows that there is no danger of multicollinearity, only the association between 'age' and '(age^2)/100` has a value close to 1, namely 0.988 (see Appendix B.1, Table 7). Yet, this does not pose a threat to the model as discussed in the measures section.

4.3 Assumptions Ordered Logistic Regression

An Ordered Logistic Regression estimates the causal effects for ordinal dependent variables. To avoid detailed output of the progress of the algorithm, the 'nolog' option is used after the *ologit* command in Stata. To make the results more understandable, we additionally obtain the marginal effects for our main variable of interest WFH. The underlying assumption of the Ordered Logit Regression is the Proportional Odds Assumption (also referred to as Parallel Regression Assumption). It states that the relationship between each pair of outcome groups is the same. As there is no difference in the relationship between all pairs of groups, there is only one model with one set of coefficients. For our model, it means that the coefficients that describe the relationship between category 1 and all higher categories of the dependent variables are the same as the coefficients that describe the relationship between category 2 and all higher categories. Looking at the response variables, one can argue that they are clearly ordered. The different categories were not presented to the respondents with labels, respondents were simply asked to indicate their satisfaction on a scale from 0 to 10. Therefore, there

is strong reason to conclude that the difference between the different steps e.g., 1 to 2, naturally has the same difference as 2 to 3 and the assumption holds.

When testing for the assumption in Stata, the difficulty is that the program does not recognize categorical variables. Our model includes four categorical variables and thus the results of the tests are questionable. Therefore, we perform the tests once by omitting the i (indicating that a variable is categorical), thus Stata considers all variables as continuous. We also perform the tests omitting all categorical variables. The results of the Likelihood ratio test and Brant test for model 2 when omitting all categorical variables indicate that the assumption holds as both tests show insignificant results (see Appendix B.2, Table 8). For model 4 the Likelihood ratio test showed a significant result for both approaches, and the Brant test could not be computed which implies that the assumption is violated. One solution can be to reduce the number of categories from ten to five, but for this sample, the test still fails.

5. Results

This section presents the relevant results of the Linear Regression models, explains that the results of the Ordered Logistic Regression models are comparable, and links the results to the four tested hypotheses.

5.1 Linear Regression

Table 2 shows the results of the two Linear Regression models. For the main effect of interest, 'WFH' on 'Job satisfaction', holding all other factors constant, there is a negative association between WFH and the level of job satisfaction. However, this association is statistically insignificant on the 10% significance level and must be interpreted with caution. Regarding sub-hypothesis 1 targeting the gender differences, the interaction term shows that holding all other factors constant, females indicate higher levels job satisfaction than males when WFH. Similarly, this association is statistically insignificant on the 10% significance level and must be interpreted with caution.

For sub-hypothesis 2 about the effect of 'WFH' on 'Satisfaction with working hours', holding all other factors constant, there is a positive association between WFH and the level of satisfaction with working hours. Yet, this association is statistically insignificant on the 10% significance level and must be interpreted with caution. Regarding sub-hypothesis 3 testing the gender differences for the satisfaction with working hours, the interaction term shows that holding all other factors constant,

females indicate higher job satisfaction than male when WFH. This association is statistically significant at the 1% significance level.

Table 2. Linear Regression results for the relationship between Job satisfaction and WFH and the relationship between Satisfaction with working hours and WFH

Variable	**Job satisfaction**	**Satisfaction with working hours**
WFH	-0.159	0.125
	(0.127)	(0.134)
Female	0.082	0.061
	(0.100)	(0.110)
WFH*Female	0.077	0.459**
	(0.182)	(0.182)
Constant	7.422***	7.831***
Model diagnostics		
R-squared	0.074	0.062
Root MSE	1.391	1.525
Prob > F	0.000	0.000
Observations	1,823	1,823

Note. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Female refers to the reference category male. The complete table including the control variables can be found in Appendix C, Table 9. Controls: gender, overtime, age, (age^2)/100, partner, number of children, education, occupation, net income. *p < 0.1 **p < 0.05 ***p < 0.01.

5.2 Ordered Logistic Regression

Table 10.1 (Appendix C) shows the results of the Ordered Logistic Regression for our variables of interest. The coefficients display the log odds for a one unit increase in the dependent variable meaning for our variables a one level increase in the two satisfaction variables. The results in their log odds form are not directly comparable to the Linear Regression results. Thus, only the significance of the coefficients would be comparable between the models.

For comparability to the Linear Regression results, Table 10.2 (Appendix C) shows the average marginal effects of the effect of 'WFH' on 'Job satisfaction' and 'Satisfaction with working hours'. The findings of the effect of WFH on job satisfaction and satisfaction with working hours are overall comparable to the results of the Linear Regression model. Even though the coefficients of the lower levels of job satisfaction suggest a positive association of WFH with job satisfaction, for high levels of job satisfaction there is a negative association. In line with the results of the OLS, the coefficients are insignificant at the 10% significance level and thus the results must be interpreted with caution. Moreover, the coefficients of the lower levels of job satisfaction suggest a negative association of WFH with job satisfaction, for high levels of job satisfaction there is a positive association. In contrast to the results of the OLS, the coefficients are significant at the 1% significance level.

The assumptions of the Ordered Logistic Regression models are relatively restrictive, and we cannot conclude that they hold. Moreover, the Ordered Logistic Regression models do not test for gender differences. As the results are overall comparable, the conclusion is based on the results of the Linear Regression models.

Table 4 summarizes the results for the four tested hypotheses. Given the statistically insignificant coefficients:

- ➔ We cannot reject the null hypothesis that there is no difference in the level of job satisfaction the higher the number of hours WFH relative to the hours worked from the conventional office.
- ➔ We do not reject the null hypothesis that there is no difference in the level of satisfaction with working hours the higher the number of hours WFH relative to the number of hours worked from the conventional office.
- ➔ We fail to reject the null hypothesis that there is no difference in the increase in job satisfaction between women and men when WFH.
- ➔ We reject the null hypothesis that there is no difference in the level of satisfaction with working hours between women and men when WFH. Thus, the alternative hypothesis saying that there is a difference in the level of satisfaction with working hours between women and men when WFH is supported.

Table 4. Overview of results for the tested hypotheses

	Results Linear Regression
Main hypothesis	Do not reject H_0
Sub-hypothesis 1	Do not reject H_0
Sub-hypothesis 2	Do not reject H_0
Sub-hypothesis 3	Reject H_0

Note. H_0 denotes the null hypothesis.

6. Limitations

This section explains that the presented results should be used considering the following limitations and should be interpreted carefully.

As the assumptions of the Linear Regression do not hold, the estimates are not reliable. For the Ordered Logit Regression, the tests suggest that the Proportional Odds assumption holds for Model 2 but does not hold for Model 4. Even though we have strong reason to believe that the assumptions hold for both approaches, the Likelihood ratio test and Brant test indicated that the results of Model 4 may not be reliable. Furthermore, for both the Linear Regression models and the Ordered Logit models, numerous control variables are included in the model. Yet, the threat of an omitted variable bias exists as we cannot be sure that we controlled for all factors associated with 'Job satisfaction' and 'Satisfaction with working hours'. The use of panel data or an experimental study design with a control and experiment group, such as conducted by Bloom et al. (2015) can reduce the threat of the omitted variable bias. It is especially important to note that the survey was answered by the respondents during the COVID-19 pandemic which created special circumstances. We chose this point in time to obtain a large sample of homeworkers. Yet, the effects of the crisis may have influenced the results significantly and created biased estimates. Governments made the decision for everyone to WFH mandatorily and the lockdowns challenged mental stability.

Moreover, only the association tested in sub-hypothesis 3 is statistically significant. A possible explanation is that compared to Wheatley (2017) with panel observations of around 20,000, the sample size of around 2,000 individuals is rather small. Furthermore, the respondents received a monetary reward for completing the survey which is beneficial for the reliability of the answers.

However, the Work and Schooling Study included many more questions and touched on a broad range of topics than used for this paper. This may yield in measurement errors because the answers are answered less consciously. It can be illustrated by the fact that we had to delete almost 4,000 individuals due to missing values or for answering "I don't know".

Lastly, the findings of this paper should not be generalized to other countries because the studied sample only consists of observations from the Dutch labour force which may differ from other countries' labour force.

7. Conclusion

This thesis examined the research questions:

1. *Does WFH have a positive effect on job satisfaction?*
2. *If so, are there gender differences in this relationship?*
3. *Does WFH have a negative effect on working hour satisfaction?*

The introduction highlighted the relevance of WFH in modern economies and societies. In the theoretical framework, we introduced the positive and negative effects of WFH on job satisfaction and concluded that the findings of positive associations outweigh the negative associations. Given the existing research in the field, we arrived at the three sub-hypotheses testing for gender differences and the satisfaction with working hours. Using data about Dutch individuals from the LISS panel, we build two Linear Regression models and two Ordered Logistic Regression models replicating the approach of Wheatley (2017). It is important to keep in mind that the data is based on a survey conducted during the COVID-19 pandemic. By dividing the number of hours WFH by the total hours worked, the results compare to the hours worked in the conventional office. The results showed predominantly statistically insignificant results for the variables of interest but give an idea about the associations. The limitations highlight that the results of this study must be interpreted carefully. As discussed in the methodology part of this paper, the assumptions are violated for the Linear Regression and do not clearly hold for the Ordered Logistic model. The conclusion is based on the Linear Regression results. Lastly, we present the suggestions for future research.

Given the statistically insignificant coefficients, there is no evidence for the main hypothesis that the higher the number of hours WFH relative to the hours worked from the conventional office, the higher the level of job satisfaction. However, the results show that there is a negative association between

WFH and the level of job satisfaction, in contrast to the hypothesis, but this association is statistically insignificant on the 10% significance level. A negative association between home working and job satisfaction is predicted amongst others by Feng & Savani (2020) due to an overload of the time-or strain-based role during the COVID-19 pandemic because of the increased home demands. Mediators are for example work intensification and difficulties switching off (Felstead & Henseke, 2017) as well as isolation (Bloom et al., 2015). The effects of the COVID-19 pandemic may have intensified this negative effect (Feng & Savani, 2020).

Likewise, we found no evidence for sub-hypothesis 1 that the higher the number of hours WFH relative to the number of hours worked from the conventional office, the higher the level of satisfaction with working hours. In line with the findings of Bloom et al. (2015) of greater convenience when WFH which results in a reduced number of breaks, time off, and sick days, the positive sign of the coefficient indicates that there is a positive association between WFH and the level of satisfaction with working hours. However, this association is statistically insignificant on the 10% significance level.

Additionally, there is no evidence for sub-hypothesis 2 that the increase in job satisfaction is higher for women than for men when WFH. This is similar to the finding that women did not rate their job satisfaction lower compared to men before the COVID-19 pandemic (Feng & Savani, 2020). The sign of the interaction term shows that the increase in the level of job satisfaction is higher for women than for men when WFH, as suggested by Origio and Pagani (2008) and as hypothesized. But this association is statistically insignificant on the 10% significance level.

Lastly, there is evidence that the increase in satisfaction with working hours is higher for women than for men when WFH. Therefore, sub-hypothesis 3 is supported, as suggested e.g., by the better balance of family and work demands (Maruyama, Hopkinson & James, 2009).

Table 5 summarizes the conclusions of the four tested hypotheses. To conclude, the findings did not provide evidence for three of the hypotheses but supported sub-hypothesis 3. Yet, regarding our main hypothesis, the findings hint at a positive association between WFH and job satisfaction for the studied sample.

Table 5. Overview of conclusions for the tested hypotheses

	Results Linear Regression
Main hypothesis	No evidence
Sub-hypothesis 1	No evidence
Sub-hypothesis 2	No evidence
Sub-hypothesis 3	Evidence to support

Based on the results of this paper, a suggestion for future research is to focus on experimental study designs to test the effect of WFH on job satisfaction to obtain more statistically significant results and to increase the external validity of the findings. A positive outlook is provided by the continuing rising trend of people WFH as mentioned in the introduction. This may simplify the costly set-up of an experiment in the field.

Second, it would be interesting to repeat the study using post-COVID-19 data. As the LISS panel repeats the Work and Schooling survey annually, it is possible to replicate this study in the following years. This would allow for a comparison of the findings and to see whether the effect of the pandemic and especially the mandatory WFH regulations significantly biased the results. The effect of the pandemic could also be investigated by comparing the results to a sample from different country where less restrictive COVID-19 regulations were applied e.g., Sweden.

Another suggestion for future research is to further explore the differences in the effect of WFH on job satisfaction and satisfaction with working hours for the types of households (e.g., single households vs. family households) as the literature review revealed that the results may differ.

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Appendix

A Descriptive Statistics

Table 6. Complete descriptive statistics

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Job satisfaction	1,823	7.413	1.437	0	10
Satisfaction with working hours	1,823	7.571	1.565	0	10
WFH	1,823	0.291	0.389	0	1
Overtime	1,823	1.011	0.901	0	28
Female	1,823	0.521	0.500	0	1
Age	1,823	45.242	12.717	16	103
Age^2/100	1,823	22.087	11.462	2.56	106.09
Partner	1,823	0.289	0.454	0	1
Number of children	1,823	0.915	1.122	0	6
Education					
Primary school	1,823	0.024	0.151	0	1
VMBO	1,823	0.099	0.299	0	1
HAVO/VWO	1,823	0.083	0.277	0	1
MBO	1,823	0.287	0.457	0	1
HBO	1,823	0.327	0.470	0	1
WO	1,823	0.179	0.384	0	1
Occupation				0	1
Higher academic/independent	1,823	0.121	0.326	0	1
Higher supervisory	1,823	0.091	0.287	0	1
Intermediate academic/indep.	1,823	0.299	0.458	0	1
Intermediate supervisory/commercial	1,823	0.123	0.328	0	1
Other mental work	1,823	0.205	0.404	0	1
Skilled & Supervisory manual work	1,823	0.048	0.216	0	1
Semi-skilled manual work	1,823	0.066	0.248	0	1
Unskilled & trained manual work	1,823	0.043	0.204	0	1
Agrarian profession	1,823	0.003	0.057	0	1
Net income	1,823	2,212.355	975.452	0	9,000

Note. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Female refers to the reference category male. Partner means that the respondent indicated to live with a partner. Net income is the personal net monthly income measured in €.

B.1 Assumptions OLS

Linearity

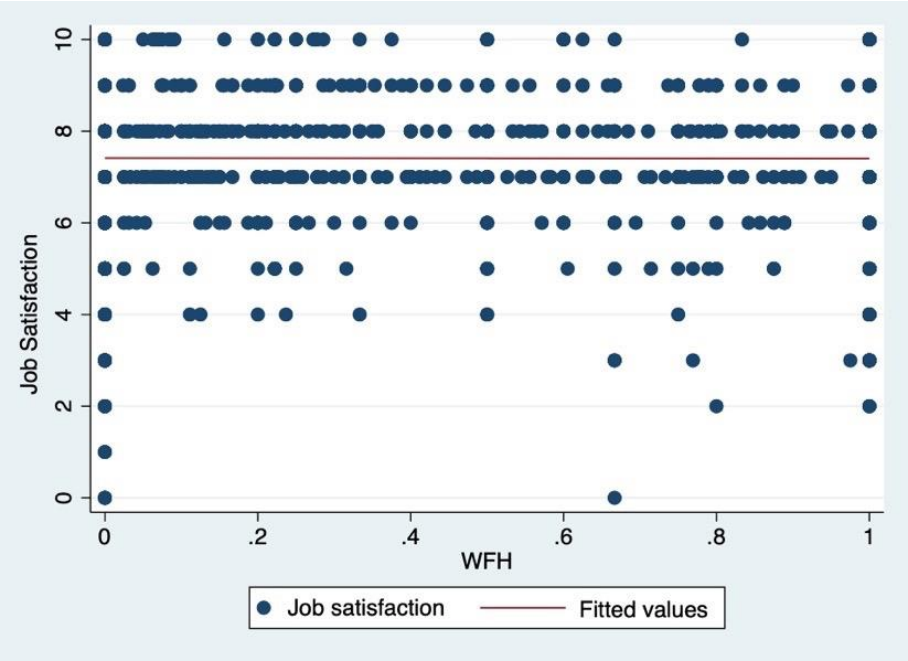

Figure 1.1 Results of testing for a linear relationship between Job satisfaction and WFH

Figure 1.2 Results of testing for a linear relationship between Satisfaction with working hours and WFH

Homogeneity of variance

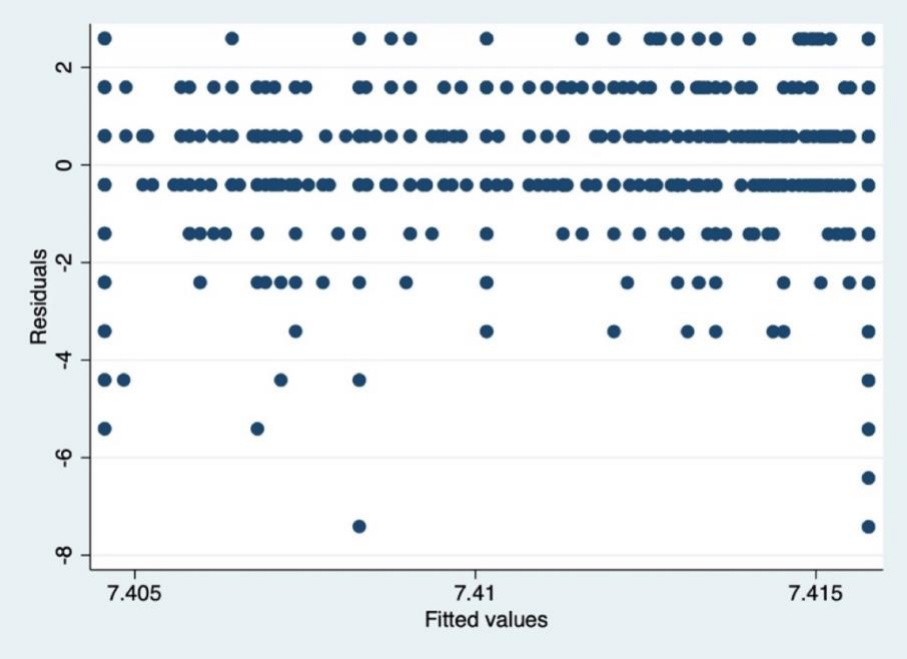

Figure 2.1 Results of testing for homogeneity of the variance between Job satisfaction and WFH (Kernel density estimate, bandwidth = 0.0005)

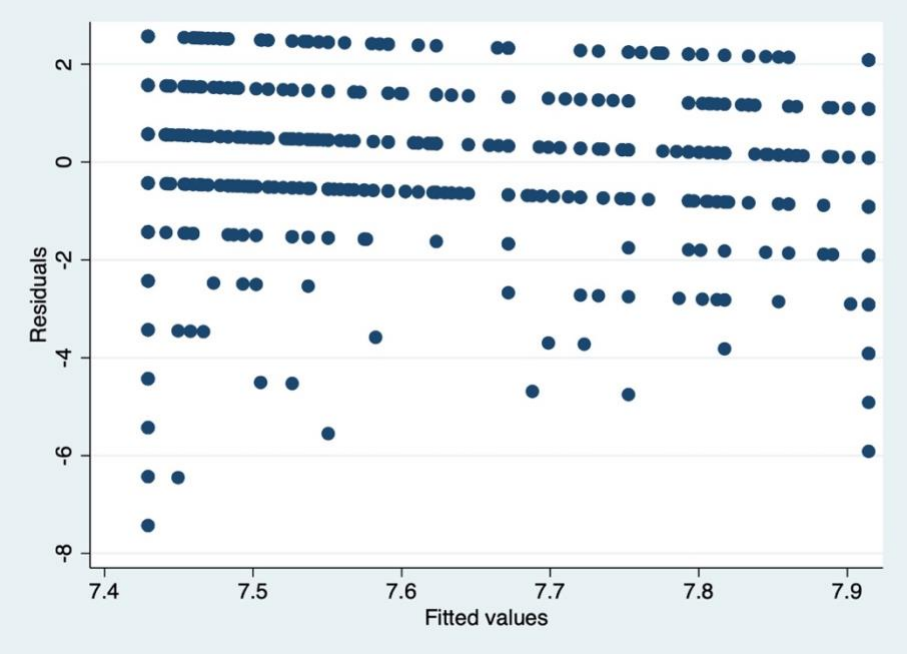

Figure 2.2 Results of testing for homogeneity of the variance between Satisfaction with working hours and WFH (Kernel density estimate, bandwidth = 0.0005)

Normality

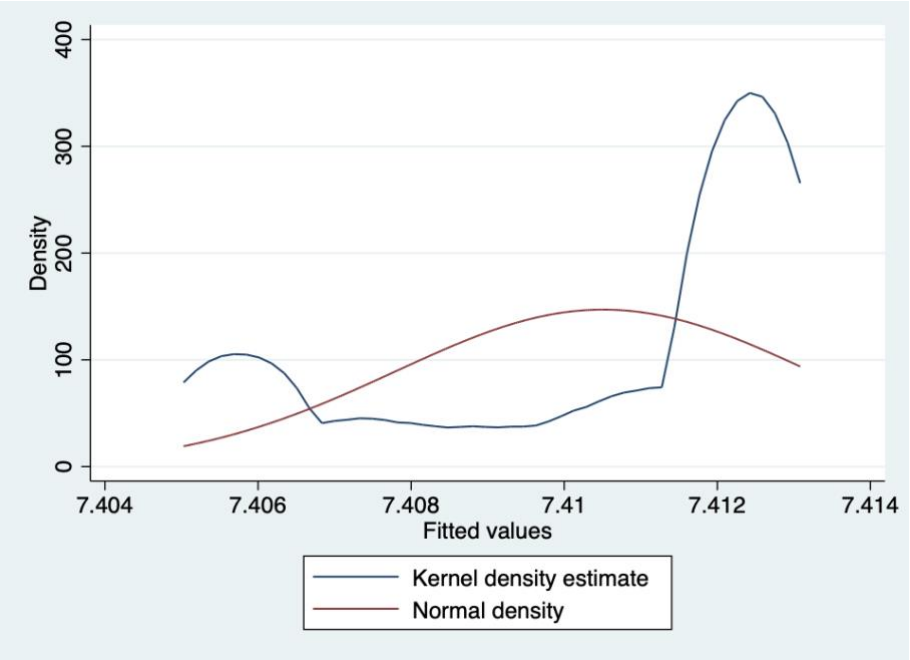

Figure 3.1 Results of testing for normality of errors between Job satisfaction with and WFH

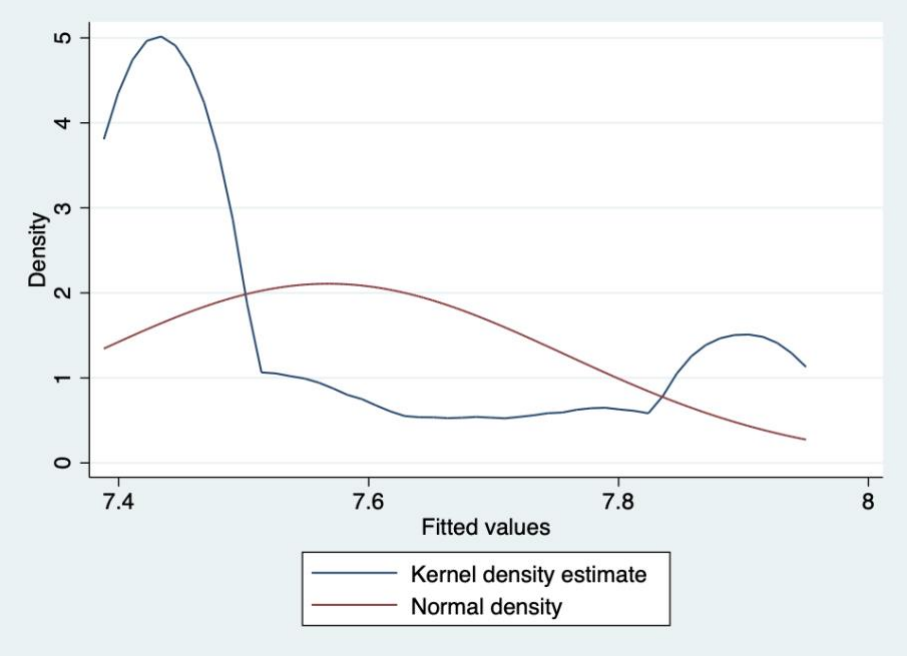

Figure 3.2 Results of testing for normality of errors between Satisfaction with working hours and WFH

Collinearity

Table 7. Collinearity Results

Variable	Job satisfaction	Satisfaction with working hours	WFH	Overtime	Gender	Age
Job satisfaction	1.000					
Satisfaction with working hours	0.467***	1.000				
WFH	-0.003	0.121***	1.000			
Overtime	-0.034	-0.059**	-0.028	1.000		
Gender	0.015	0.052**	-0.084***	0.014	1.000	
Age	0.148***	0.107***	0.038	-0.052**	-0.082***	1.000
Age^2/100	0.147***	0.112***	0.045*	-0.036	-0.075***	0.988***
Partner	0.017	0.004	-0.021	-0.045*	-0.037	0.083***
# of children	-0.018	-0.055**	-0.043*	-0.021	0.015	-0.089***
Education	-0.005	0.047**	0.278***	-0.027	0.031	-0.124***
Occupation	-0.154***	-0.119***	0.293***	0.030	-0.031	0.058**
Net income	0.109***	0.089***	0.303***	-0.057**	-0.364***	0.188***

Variable	Age^2/100	Partner	# of children	Education	Occupation	Net income
Age^2/100	1.000					
Partner	0.080***	1.000				
# of children	-0.122***	0.312***	1.000			
Education	-0.142***	-0.005	-0.049**	1.000		
Occupation	0.068***	-0.010	0.026	-0.557***	1.000	
Net income	0.153***	-0.009	-0.065***	0.403***	-0.433***	1.000

Note. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Partner means that the respondent indicated to live with a partner. Net income is the personal net monthly income measured in €. *p < 0.1 **p < 0.05 ***p < 0.01.

B.2 Assumptions Ordinal Logistic Regression

Table 8. Results of testing for the proportional odds assumption for Model 2 and Model 4

	(1) Model 2 Prob > chi^2	(2) Model 2 Prob > chi^2	(3) Model 4 Prob > chi^2	(4) Model 4 Prob > chi^2
Likelihood ratio test	0.034	0.080	0.000	0.005
Brant test	0.018	0.310	-	-

Note. Column 1 shows the results for Model 2 when omitting the i in Stata. Column 2 shows the results for Model 2 when excluding the categorical variables in Stata. Column 3 shows the results for Model 4 when omitting the i in Stata. Column 4 shows the results for Model 4 when excluding the categorical variables in Stata. *p < 0.1 **p < 0.05 ***p < 0.01.

C Complete Regression Results (including the control variables)

Table 9. Linear regression results for the relationship between Job satisfaction and WFH and the relationship between Satisfaction with working hours and WFH including controls

Variable	Job satisfaction	Satisfaction with working hours
WFH	-0.159	0.125
	(0.127)	(0.134)
Female	0.082	0.061
	(0.100)	(0.110)
WFH* Female	0.077	0.459**
	(0.182)	(0.182)
Overtime	-0.034	-0.086
	(0.056)	(0.059)
Age	-0.012	-0.031
	(0.018)	(0.019)
Age^2/100	0.028	0.049**
	(0.020)	(0.021)
Partner	0.019	0.041
	(0.076)	(0.085)
Number of children	-0.000	-0.047
	(0.031)	(0.035)
Education (primary school as reference)		
VMBO	0.516*	0.302
	(0.302)	(0.332)
HAVO/VWO	0.206	0.236
	(0.305)	(0.325)
MBO	0.237	0.232
	(0.297)	(0.319)
HBO	0.052	0.208
	(0.298)	(0.322)
WP	-0.322	-0.088
	(0.315)	(0.334)
Occupation (Higher academic/independent as reference)		
Higher supervisory	-0.202	-0.274*
	(0.138)	(0.145)
Intermediate academic/indep.	-0.304**	-0.336***

	(0.125)	(0.126)
Intermediate supervisory/commercial	-0.649***	-0.437***
	(0.148)	(0.156)
Other mental work	-0.638***	-0.313**
	(0.140)	(0.143)
Skilled & Supervisory manual work	-0.840***	-0.844***
	(0.190)	(0.217)
Semi-skilled manual work	-1.096***	-0.954***
	(0.211)	(0.232)
Unskilled & trained manual work	-0.947***	-0.338
	(0.249)	(0.263)
Agrarian profession	-2.462***	-1.274
	(0.815)	(0.926)
Net income	0.000***	0.000*
	(0.000)	(0.000)
Constant	7.422***	7.831***
Model diagnostics		
R-squared	0.074	0.062
Root MSE	1.391	1.525
Prob > F	0.000	0.000
Observations	1,823	1,823

Note. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Female refers to the reference category male. Partner means that the respondent indicated to live with a partner. Net income is the personal net monthly income measured in €. Standard errors are in parentheses. *p < 0.1 **p < 0.05 ***p < 0.01.

Table 10.1 Ordinal Logistic Regression results for the relationship between Job satisfaction and WFH and the relationship between Satisfaction with working hours and WFH

Variable	**Job satisfaction**	**Satisfaction with working hours**
WFH	-0.076	0.407***
	(0.122)	(0.121)
Model diagnostics		
Pseudo R-squared	0.024	0.018
LR statistic	144.25	116.56
Prob (LR statistic)	0.000	0.000
Log likelihood	-2987.243	-3159.935
Observations	1,823	1,823

Note. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Controls: gender, overtime, age, (age^2)/100, partner, number of children, education, occupation, net income. Standard errors are in parentheses. *p < 0.1 **p < 0.05 ***p < 0.01.

Table 10.2 Marginal Effects the relationship between Job satisfaction and WFH and the relationship between Satisfaction with working hours and WFH

(2) Job satisfaction	WFH	(4) Satisfaction with working hours	WFH
0	0.000	0	-0.001
	(0.000)		(0.003)
1	0.000	1	-0.001*
	(0.000)		(0.001)
2	0.000	2	-0.002**
	(0.001)		(0.001)
3	0.001	3	-0.006***
	(0.002)		(0.002)
4	0.001	4	-0.007***
	(0.002)		(0.002)
5	0.003	5	-0.017***
	(0.005)		(0.005)
6	0.005	6	-0.024***
	(0.008)		(0.007)
7	0.007	7	-0.038***
	(0.012)		(0.011)
8	-0.007	8	0.023***
	(0.012)		(0.007)
9	-0.007	9	0.036***
	(0.011)		(0.011)
10	-0.004	10	0.036***
	(0.006)		(0.011)

Note. The table shows the average marginal effects for the independent variable WFH on the dependent variables Job satisfaction and Satisfaction with working hours. The average marginal effect is the average change in probability when the dependent variable increases by one unit (here, when the satisfaction variables increase by one level). Columns 1 and 2 refer to Model 2 while columns 4 and 5 and 6 refer to Model 4. Job satisfaction and Satisfaction with working hours are measured on a 0 to 10 scale. WFH is the percentage of hours worked from home of total hours worked. Standard errors are in parentheses. Controls: gender, overtime, age, (age^2)/100, partner, number of children, education, occupation, net income. *p < 0.1 **p < 0.05 ***p < 0.01.