

ERASMUS UNIVERSITY ROTTERDAM
Erasmus School of Economics

The Effect of Working From Home on Work Quality and Job Satisfaction: Evidence from the Auditing Industry

Maria Inês Antunes Botica (637661)

Abstract

The Covid-19 pandemic has sparked a dramatic increase in working from home policies. However, such policies have proved to be controversial. On the one hand, some managers argue that being removed from the physical office reduces work productivity and quality. On the other hand, others argue that employee job satisfaction increases with implementation of working from home policies. In the context of the auditing industry, this thesis aims to shed light on this debate, via two separate analyses.

Firstly, the effect of working from home on audit quality in the United States is estimated, by utilizing lockdown restrictions as a proxy for remote auditing. The cross-state and cross-time variation in the timing of lockdowns are exploited to study their effect on audit restatements through difference-in-differences regressions. Although a large overall effect of lockdown restrictions on audit quality is ruled out, it is found that during the first two months of lockdowns, audit quality slightly decreases. Shortly after, quality rises back into its initial level, suggesting a learning curve in implementing remote auditing. Secondly, the relationship between job satisfaction and increased working from home capacity in auditing companies is studied. Via a novel survey of individuals at a Big-4 auditing company, it is found that individuals with a higher exposure to working from home report a higher level of job satisfaction and decrease in work stress of employees.

Supervisor: Dr. Max Coveney

Second Assessor:

Date final version: 26/06/2023

The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

Acknowledgements

I would like to express my deepest gratitude to my supervisor, Dr. Max Coveney, for all the guidance and support throughout the thesis writing process. Additionally, this endeavor would not have been possible without the assistance of *KPMG Netherlands*. I am also grateful for my family, especially my parents and grandparents, who have always fought for and encouraged my education. “If I have seen further, it is by standing on the shoulders of giants.”

Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 3 |
| 2 | Literature Review | 6 |
| 2.1 | WFH Policies and (Audit) Quality | 6 |
| 2.2 | WFH Policies and Job Satisfaction | 8 |
| 3 | The Effect of WFH on Audit Quality: Evidence from Covid Lockdowns | 10 |
| 3.1 | Theory | 10 |
| 3.1.1 | Measuring Audit Quality | 10 |
| 3.2 | Data | 11 |
| 3.2.1 | Dependent Variable | 11 |
| 3.2.2 | Independent Variable | 14 |
| 3.2.3 | Control Variables | 14 |
| 3.3 | Methodology | 15 |
| 3.3.1 | Regression Models | 17 |
| 3.3.2 | Assumptions | 18 |
| 3.4 | Results | 19 |
| 3.4.1 | The Effect of Lockdown Restrictions on Audit Quality | 19 |
| 3.4.2 | Dynamic Effects of Lockdown Restrictions on Audit Quality | 20 |
| 3.5 | Discussion | 23 |
| 4 | The Effect of WFH on Self-Reported Job Satisfaction: Evidence from a Big-4 Company | 26 |
| 4.1 | Theory | 26 |
| 4.1.1 | Measuring Job Satisfaction | 26 |
| 4.2 | Data | 27 |
| 4.2.1 | Data Gathering | 27 |
| 4.2.2 | Descriptive Statistics | 28 |
| 4.3 | Methodology | 31 |
| 4.3.1 | Regression Model | 31 |
| 4.3.2 | Assumptions | 32 |
| 4.4 | Results | 32 |
| 4.5 | Discussion | 34 |
| 5 | Conclusion | 36 |
| | References | 38 |

A Appendix

41

B Appendix

43

1 Introduction

The Covid-19 outbreak sparked a large-scale and rapid shock in working from home (WFH) policies.¹ Despite the number of COVID-19 infections and lockdowns since receding, it seems that WFH practices have become permanent. Barrero et al. (2021) have estimated that 20% of full workdays will be done remotely after the pandemic is over. Before the pandemic, this number was at 5%. A more recent study by Pew Research Center (2022) has found that, two years into the pandemic, approximately 59% of United States (U.S.) workers whose jobs can be performed predominantly from home are currently working from home all or most of the time. Even though this marks a decline from October 2020, when this value was at 71%, it is still much higher than the 23% who say they worked remotely frequently before the coronavirus outbreak. Moreover, Aksoy et al. (2022) state that the big rearrangement to WFH will be a lasting effect, even in the aftermath of the pandemic. The authors argue that the mass social experiment in remote working compelled by the pandemic, along with the huge flow of new information about WFH and the positively shifted perspectives on this matter, have turned this shock into a permanent one.

Even though WFH became more enduring, the viability of this working style is often questioned. A debate has arisen regarding the benefits and costs of remote working. On the pro-WFH side, the smaller physical footprints and cost reduction for companies, along with higher job satisfaction of the employee's side, leaves managers embracing WFH policies. Public opinions by some managers reflect this. For example, *Yelp* CEO, Jeremy Stoppelman, is in favor of fully remote work, due to high satisfaction shown by surveys and continued productivity, as seen in *Fortune* (2022b). Additionally, Tim Cook, *Apple's* CEO, claims that he does not believe work will shift back to what it was, as "there are some things that actually work really well virtually", as seen in *India Today* (2020). From an academic perspective, PWC Netherlands (2020) has analyzed the financial cost of WFH. The author found that both companies and their employees find savings through an expansion of their remote workforce. Moreover, Bloom et al. (2015) has stated that employees feel more satisfied with their job when their employer provides a hybrid model of working that includes the option to WFH.

On the side against WFH, less awareness regarding workers' productivity, as well as higher logistical and operational organization leaves managers reluctant, sometimes even demanding workers to be on-site full-time. For example, David Solomon, CEO of *Goldman Sachs*, wanting to end hybrid work, has ordered employees to be back in the office at least 5 days per week, as seen in *Fortune* (2022a). *Tesla's* CEO Elon Musk has famously demanded that *Tesla* employees work at the office "at least 40 hours per week" (Franklin, 2022). In the academic debate, Aksoy et al. (2022) argue that WFH also means fewer in-person communications and greater operational complexity.

There is a particular reluctance for allowing WFH in the auditing industry. Auditing is an accounting practice involving the examination of published accounts of organizations (clients), ensuring these provide a

¹According to United States Census Bureau (2022), between 2019 and 2021, the number of people primarily working from home tripled from 5.7% to 17.9%.

true view of their financial position and results (KPMG UK, 2023). Even though auditing is not mandatory for non public entities, it is a measure to protect assets and minimize the possibility of fraud, to ensure integrity and financial reliability, and to establishing compliance with statutory regulations and laws. In the auditing procedure, evidence such as accounting records and the firm’s own quality procedures is collected, and engagements with the client are essential to collect this type of information. Appelbaum et al. (2020) have argued that audit quality would decrease when audits are performed remotely, due to this reliance of auditors on physical evidence collection procedures. However, literature exploring the effect of remote auditing caused by Covid-19 related restrictions is contradicting (Appelbaum et al. (2020); Jin et al. (2022); Gong et al. (2022a); Saputro and Mappanyukki (2022); Eulerich et al. (2022)).²

Despite the existing reluctance for WFH, literature has shown that the adoption of WFH measures by companies increases their employees’ job satisfaction (Barrero et al. (2021), Davidescu et al. (2020), Bloom et al. (2015)). In turn, employees seem to perform better at their job when they are satisfied with it (Hassan et al. (2020), Bin and Shmailan (2015), Halkos and Bousinakis (2010)). Companies therefore understand that when their employees are satisfied, they are more productive, i.e. they will add more value to the company. It is therefore of interest to understand the perception and preference for WFH policies by workers.

This thesis aims to explore the pros and cons of working from home in the auditing industry, by studying two effects through which the implementation of WFH influences companies in the industry. As a first component, the effect of working from home on the quality of audits performed is studied. Archival data on audit quality before and during Covid-19, in the U.S. is analysed. Exploiting the WFH shock that occurs due to Covid related lockdown restrictions, both a Two-Way-Fixed-Effects (TWFE) model and a Dynamic Effects (DE) model are constructed. Using the TWFE model, it is shown that a large effect of lockdowns on audit quality can be ruled out. This suggests that WFH doesn’t have a large effect on audit quality. Using the DE model, evidence of a small negative impact of lockdowns on audit quality in the first two months is found. This suggests that (1) the initial WFH shock may have a slight effect on audit quality, and that (2) there may be some learning effect over time, as these quality effects dissipate. These findings come with the caveat that Covid lockdowns may have influenced audit quality in other ways than just WFH.

As a second component of this thesis, the relation between working from home and job satisfaction in auditing companies is studied. A novel survey is conducted in a Big-4 auditing company in the Netherlands, to understand how newly imposed WFH policies within the company affect employees’ self reported job satisfaction. From analysing general survey responses, it seems that, overall, job satisfaction increases with augmented WFH capacity by the company. To understand the effect further, an individual’s reported exposure to WFH practices is regressed on various measures of job satisfaction, controlling for various individual characteristics. It was found that, generally, employees’ job satisfaction increases and work stress decreases when they start working remotely instead of on-site, given increased WFH capacity offered by the company.

Via these two components, this thesis sheds light on how the implementation of WFH policies affects

²This literature will be further detailed in section 2.

the auditing industry. The results obtained from this thesis contribute to literature on the effect of WFH measures in the auditing industry. Moreover, the thesis inform managers of companies within the industry on the costs and benefits of the adoption of WFH measures. Managers at auditing companies should take these into account when making decisions on implementation of models of working that include WFH.

The paper is structured as follows. In section 2, literature on WFH policies, work quality, and job satisfaction is presented. Section 3 studies the effect of WFH on audit quality, using evidence from Covid lockdowns. Particularly, theory on the subject is discussed, the data used is presented, methodology is introduced, and the regression results are interpreted. The section is finalized with a discussion on the implications and limitations of these results. In section 4, the effect of WFH on job satisfaction is studied. Theory on this topic is examined, followed by a presentation of the data used and some preliminary results, and regression-based analysis. Following, the limitations and implications of the results presented are discussed. Section 5 concludes this thesis.

2 Literature Review

This thesis connects to two fields of literature. First, there is literature on the effect of different working from home policies on work performance. Second, literature on how more flexible working policies relate to higher job satisfaction. In this section, previous research on these topics will be covered, along with literature gaps the thesis aims to fill.

2.1 WFH Policies and (Audit) Quality

This first field of literature covers empirical methods estimating the causal effect of different working from home policies on the performance of the employees on their job.

Bloom et al. (2015) conducted a study on whether working from home succeeds, using data from a Chinese experiment where call center employees who volunteered to WFH were randomly assigned either to work from home or in the office for nine months. The authors concluded that the job performance of the workers who worked from home increased, compared to the ones who remained going to the office. More specifically, they found that the performance of home workers went up by 13% during the experiment, and this came mainly from a 9% increase in the number of minutes they worked during their shifts. However, it is relevant to state that the job of a call center worker is particularly suitable for teleworking: and that the experiment did not require significant reorganization of the workplace, as only a small percentage of workers were in the treatment group.

More recently, Gibbs et al. (2023) conducted a similar study. The authors studied employee productivity in an IT company based in India, before and during the WFH period of Covid-19 related restrictions. They found that employees increased their average number of working hours per day during WFH, but that there was a slight decline in output, concluding that productivity decreased during WFH. It is argued that this is exclusively explained by remote working, and not the pandemic, as the changes materialize immediately after transition to WFH. There is no change in outcomes at the start of the pandemic before WFH was implemented, and the changes found do not co-move with the evolution of the pandemic. However, remote work during 2020 is linked to the stress and emotional damage resulting from the pandemic, such as managing children at home, or being unable to see loved ones. In particular, the authors find that employees with children at home increased their working hours more than their colleagues without children at home. Moreover, the study takes place in a time where all firms suddenly transitioned to a fully remote working environment, which resulted in high transitional costs. In fact, the authors explain their findings through harder coordination and communication during WFH.

Susilo (2020) has studied the effect of working from home on job performance during the Covid-19 crisis in Indonesia. The author gathered data through an online questionnaire to workers in Indonesia, and then used structural equation modelling to conclude that work from home did not significantly and positively affect job performance. Even though the result was not in line with the hypothesis and previous literature studied,

the author argues that this shows that the relationship between work from home and job performance is not direct. Workers need to achieve a certain level of job satisfaction first before their job performance increases.

Remote work in the auditing industry is seen as concerning by Appelbaum et al. (2020), in a speculative article. Through a systematic review of literature, the authors argue that audit quality declines with remote audits, as auditors rely upon physical in-person evidence collection procedures. However, the paper acknowledges that creativity can contract these issues. The authors also point to the fact that documents are usually electronically available, which is crucial for remote auditing. It is concluded that, although fully remote auditing has a lower quality than on-site auditing, this quality deterioration can be minimized by the usage of technology.

On this note, Jin et al. (2022) document that audit quality is lower when auditors started performing audits remotely, following the Covid-19 pandemic outbreak. The authors construct a two-year sample using responses from a survey conducted and data from the *China Stock Market & Accounting Research Database*, and measure audit quality by clients' audited earnings and auditors' reporting decisions. Through a difference-in-differences regression, they find that remote auditing is associated with a decline in the likelihood of issuing modified audit opinions, implying quality deterioration with the remote auditing. The authors argue that remote auditing increases audit effort or risk, therefore justifying these observed increases in audit fees. However, they find that good practices such as timely adjustments of audit procedures can help improve audit quality for remotely performed audits. The study used survey-response data, meaning that it is limited by respondents' perceptions or misunderstandings of the survey questions. The evidence is also based on a more dynamic setting, where the learning process of remote auditing is still occurring, and has not yet reached an equilibrium.

Similarly, Gong et al. (2022a) study the variation in the dates of stay at home orders issued by different U.S. states. The authors find that engagements affected by the restrictions produced lower audit quality, relative to those completed before Covid-19 stay at home orders. However, they find that most of the decrease in audit quality is attributable to non-Big 4 firms, while Big 4 firms' audit quality remained statistically unchanged. The authors apply a multiple linear regression, using restatements issued and the absolute value of normal accruals as proxies for audit quality.

Conversely, Saputro and Mappanyukki (2022) have studied the effect of remote audit during the Covid-19 pandemic on audit quality, and documented that remote auditing has a positive effect on audit quality. This was done through a questionnaire survey to *The Audit Board of The Republic of Indonesia* auditors. The authors evaluate audit quality through auditor's experience, audit education that the auditor has attended, compliance with standards and audit program, adequacy of quality control, and misstatement detection and reporting. Remote audit was measured through patterns of communication and interaction both with auditors and within a team, documentation for document review, and observation techniques in the implementation of remote auditing. They concluded that performing audits remotely has a positive effect on audit quality. However, they acknowledge that in their implementation, it is necessary to have a good supervision, to

maintain audit quality. Notwithstanding, these results may be limited to Indonesia. Moreover, data gathering through survey could make the results biased.

Based on a 2020 survey, Eulerich et al. (2022) find that internal auditors perceive no difference in the efficiency and effectiveness of remote audits relative to in-person audits. They find that these rely on the results of in-person and remote audits to the same degree. However, the auditors only study perception of job performance, and not the actual job performance.

Suhendri et al. (2022) have reached similar conclusions when studying the effect of independence and remote audit on audit quality during the Covid-19 pandemic. By analysing data collected in questionnaires through multiple linear regressions, they show that remote audit has had a significant and positive effect on audit quality during the pandemic.

Overall, evidence portrayed by the literature does not paint a clear picture. WFH could increase job performance, through high job satisfaction for example, but this effect might be mitigated by the need for reorganization of the work environment. However, once firms are well established in working models that allow for remote working, the effect of working from home on audit quality should become closer to zero. Moreover, the fact that the implementation of WFH resulted from Covid induced lockdowns means that it is related to additional stress at work, which could deteriorate audit quality. This effect should also dissipate with the vanishing of the pandemic.

2.2 WFH Policies and Job Satisfaction

As said, working from home policies seem to increase job performance through increased job satisfaction. Moreover, workers' demand for more flexible WFH policies has increased. Therefore, a second stream of literature regarding studies on how employees perceive and feel about different flexible working policies is analyzed.

Job satisfaction is described by George et al. (2008) as the collection of feeling and beliefs that people have about their current job, and it can range from extreme satisfaction to extreme dissatisfaction. Aziri (2011) has concluded that job satisfaction is influenced by many factors, including the ability to WFH.

Barrero et al. (2021), Hassan et al. (2020), Bin and Shmailan (2015) have shown, through a worldwide survey, a Pakistan survey, and literature reviews, respectively, that job satisfaction is highly related with job performance. While satisfied employees better contribute to the success of their organization, employees who are not satisfied become a barrier to success. Moreover, Halkos and Bousinakis (2010) show that increased job satisfaction leads to increased productivity. These results highlight the importance of employee job satisfaction for the success of companies.

Aksoy et al. (2022) have studied preferences regarding working from home across 27 different countries, and found that, in general, people highly value the opportunity to WFH. On average, employees value the option to work remotely at 5% of their pay. This willingness to pay is positive for all countries studied except for Taiwan, where it is slightly negative. It was also found that the desired level of WFH averages at 1.7

days per week across countries. These preferences are justified through savings on both time and money. Additionally, the authors conclude that the Covid-19 shift caused most workers to upwardly revise their self-assessed WFH productivity, and the planned levels of remote working after the pandemic strongly increase with the surprising productivity increase during the pandemic. They argue that the pandemic drove a large and lasting uptake in WFH due to three main reasons. First, that it drove a mass compulsory experiment in WFH. Second, that this experiment generated new information and shifted perceptions about feasibility and productivity in WFH. Thirdly, that the shift in perceptions caused a re-optimization of working arrangements – which included a large, lasting shift to appreciative WFH levels. It is also argued that there were some preconditions in place for the shift, such as major advances in technologies during prior decades.

In a study regarding work flexibility, job satisfaction, and job performance among Romanian employees, Davidescu et al. (2020) performed a quantitative sociological survey. Through this method, the authors found that elements of working time arrangements statistically impacted the overall level of job satisfaction. More specifically, Romanian employees are more satisfied working the same number of hours per day, but more willing to have a flexibility in the number of days per week WFH. This flexibility significantly influences the overall level of employees' satisfaction. Similarly, in a pre-pandemic study, Bloom et al. (2015) reported, on their study on whether working from home succeeds, that home workers reported substantially higher work satisfaction and had more positive attitudinal survey outcomes.

Through survey-based evidence, Barrero et al. (2021) have found that four out of ten Americans who were working from home at least one day a week would seek another job if employers required a full return to business premises. The authors also found that most employees would look favorably on a new job that offers the same pay and the option to work from home some days per week. They concluded that these attitudes are pushing employers to permanently alter working arrangements, favoring WFH conditions.

There seems to be a consensus in the literature that job satisfaction increases when employees are given the option to work from home. Even though this consensus was identified across countries and industries, there is lack of literature on the effect of working from home on job satisfaction in the auditing industry. This being, and given the thesis' focus on this industry, further analysis will be done regarding the effect of more flexible working from home policies on job satisfaction in the auditing industry.

3 The Effect of WFH on Audit Quality: Evidence from Covid Lockdowns

In this section, the effect of Covid induced working from home policies on audit quality is studied. First, theory on the subject is summarized, and the hypotheses to be tested are presented. Then, the data used to study this effect is explained. The methodology applied is described, followed by the interpretation of the results obtained. Lastly, the implications and limitations of the results presented are discussed.

3.1 Theory

As previously stated, the effect of WFH on audit quality is unclear. On one hand, there is literature showing that remote auditing could be associated with a decline in audit quality (Appelbaum et al. (2020); Jin et al. (2022); Gong et al. (2022a)). The literature theorizes that this could be a result of lack of in-person engagements between the audit and the client, which authors often claim necessary for quality audits. Moreover, Jin et al. (2022) show that this decline could be associated with mechanisms such as increased effort and risk of audits. On the other hand, there is literature showing that WFH could be associated with an increase in audit quality (Saputro and Mappanyukki (2022); Suhendri et al. (2022)). This increase could be explained by the increased job satisfaction coming from the ability to WFH (Davidescu et al. (2020); Bloom et al. (2015); Barrero et al. (2021)), as higher job satisfaction is associated with higher job performance (Aksoy et al. (2022); Hassan et al. (2020); Bin and Shmailan (2015)).

In section 2.1, where literature on how working from home and lockdowns affects quality of work performed, it was pointed out that there is no clear picture on the effect of WFH on audit quality. However, literature points out that, if there is a negative effect of WFH on audit quality, this effect should become close to zero once firms and their employees adapt to WFH. This component of the thesis explores the possibility of a negative effect of WFH on audit quality that dissipates over time, as firms adapt to WFH. To do this, mandatory WFH restrictions that took place due to Covid induced lockdowns are used as a measure of WFH. Therefore, the following hypotheses will be tested:

H1.1: The increase in WFH due to lockdowns decreased the quality of audits performed.

H1.2: The negative effect of WFH due to lockdowns on audit quality becomes closer to zero over time.

3.1.1 Measuring Audit Quality

Audit quality has been vastly studied in literature, but different frameworks are adopted by different studies. For example, Jin et al. (2022) construct a model of audit quality based on the magnitude of abnormal accruals, and the issuance of modified audit opinions. Meanwhile, Albitar et al. (2020) measure audit quality through audit fees, going concern assessment, auditor human capital, audit procedures, and audit personnel

salaries. With the aim of validating the popular proxies of audit quality, Rajgopal et al. (2021) have looked at different measures of audit quality and evaluated them. Through modeling a logistic regression on the probability of audit violation, given the different audit quality measures and a set of control variables, they concluded that restatements consistently predict all the top six most cited audit deficiencies.

Restatements are an output-based audit quality measure, and occur when audited financial statements need to be revised. Rajgopal et al. (2021) argue that restatements are the best readily available proxy for audit quality, as it directly speaks to the quality of the audit performed. Given these findings, this study uses number of audits that were subject to a restatement (restatements) as a main measure of audit quality.

3.2 Data

Here, the data used to study the effect of WFH on audit quality is explained. The data sets used and the data points retrieved are described. The dependent, independent, and control variables are defined. Summary statistics are presented.

3.2.1 Dependent Variable

It is aimed to regress the effect of WFH on audit quality. To measure audit quality through restatements, longitudinal data on audits and various audit-related characteristics was gathered from Wharton’s *WRDS Audit Analytics platform*. *Audit Analytics* is a service that offers independent research to various professional communities, such as investment, accounting, insurance, legal, regulatory, and academic sectors. It offers data on accounting and oversight, audit and compliance, corporate and legal, and other independent audits, for North America and Europe. The focus lies on the *Audit Fees with Restatements* data set, which collects data from a multitude of sources and standardizes it. Particularly, the *Restatement* data set covers all *Securities and Exchange Commission* (SEC) registrants who have disclosed a financial statement restatement in electronic filings since 01/01/2001.³ In this study, observations from audits performed from 01/01/2019 until 31/12/2022, for all U.S. states are analysed.

The data set includes the variable *Restatement*, which is a dummy variable where a 1 would indicate that the corresponding fee numbers were restated in a subsequent year. In other words, the variable takes value 1 if the audit was subject to a restatement, and 0 otherwise. Summary statistics for this variable in its raw form are shown in panel A of table 1, under *RestatementRaw*.

Restatement rate is defined as the number of audits that were later subject to a restatement over the total number of audits performed. Out of all 33,291 audits performed over the studied period, 1,747 were subject to restatements (approximately 5%). This alternative measure will be adopted to some specifications of the model, as a robustness test, ensuring that the differing number of audits per state doesn’t affect the results significantly.

³The data has been extracted principally from the following form types: 8-K, 8-K/A, 10-K, 10-Q, 10-Q/A, 10-K/A, 10KSB, 10KSB/A, 20-F, 20-F/A, 40-F and 40-F/A’s.

To study the effect of WFH on audit quality, *Restatements* is used as the dependent variable, to measure audit quality. This variable was built based on the *RestatementRaw* variable, but using the subset explained above. The dataset includes the date that the observation's correspondent file was accepted by the U.S. SEC's Electronic Data Gathering, Analysis, and Retrieval system. Moreover, the state where the audit was performed is tracked. By summing the restatements by the date of the file and the state where the audit was performed, the variable *Restatements* was built. This gives the number of audits that were subject to a restatement in a certain month, in a certain state.

The variable *RestatementRate* is computed by dividing the *Restatements* variable by the total number of audits in a certain state in a certain month. The total number of audits is computed by the total number of observations for the *RestatementRaw* variable in a certain month, in a certain state. This being, *RestatementRate* gives the number of the number of audits that were subject to a restatement over the total number of audits, for a certain state in a certain month. Contrary to *Restatements*, this variable considers the number of audits performed in a state. However, due to the small number of audits in some states, *RestatementRate* is a very noisy measure. Therefore, *Restatements* is the preferred dependent variable, and *RestatementRate* is looked at, as a robustness check.

Panel A in table 1 shows summary statistics for the available data on restatements. Restatements were chosen as a measure of audit quality, since, as previously mentioned, restatements are an audit procedure that occurs to correct previously made errors. Therefore, it is assumed that these are directly negatively correlated with audit quality.

Figure 1 depicts how the number of audits performed varies by state over time. It is understood that there is a seasonality factor in the number of audits throughout the year, as there is a peak in the number of audits performed every year, around the same time for each state. This has to do with the auditing "peak season". During this season, a significant proportion of audits are conducted, primarily due to its proximity to the end of the fiscal year. Not only should all requisite documents have been submitted by this juncture, but also the deadline for submitting the auditing procedure is drawing near. In the U.S., state governments can set their own fiscal year, and most set it to end on the 30th of June (National Conference of State Legislatures, 2023), which means the busy season occurs in the middle of the first yearly semester. However, some states set it to end on a different date, which explains peaks occurring in later times. There is a steady growth in the number of audits performed per month throughout the years, with an all time high being reached in 2022. Some states (e.g. California) tend to have more audits performed than others (e.g. Utah). This has to do with the number of companies in each state.

Figure 2 depicts how the number of restatements per state varies over time. Once again, a peak every year can be seen, due to the auditing "peak season". Contrarily to the number of audits per month, there is no pattern of growth in the number of restatements per month. However, there is a peak in the number of audits subject to a restatement per month in 2020. After this year, the number of restatements per month seems to steadily decrease every year.

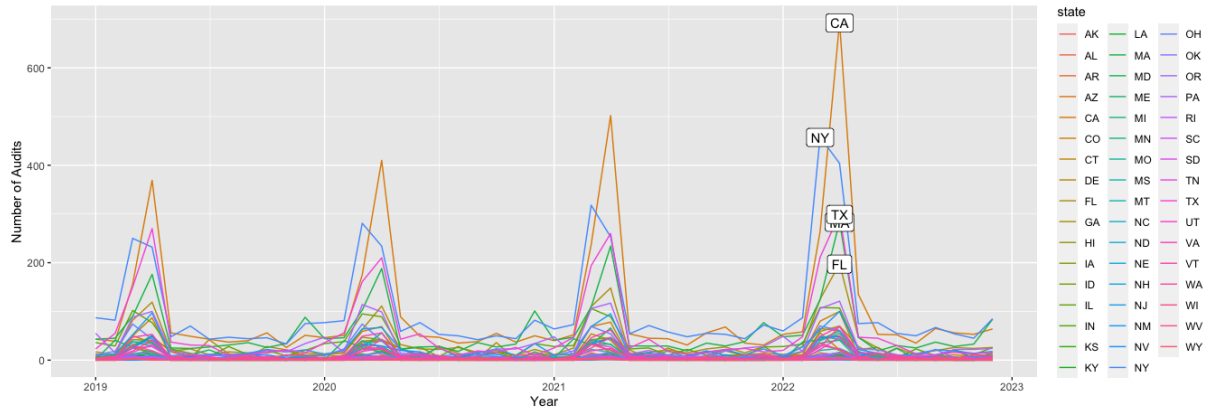


Figure 1: Number of Audits by State over Time. The figure depicts how the number of audits performed in a month evolve by state over time. California is the state with the highest number of audits per month, followed by New York, Texas, Massachusetts, and Florida.

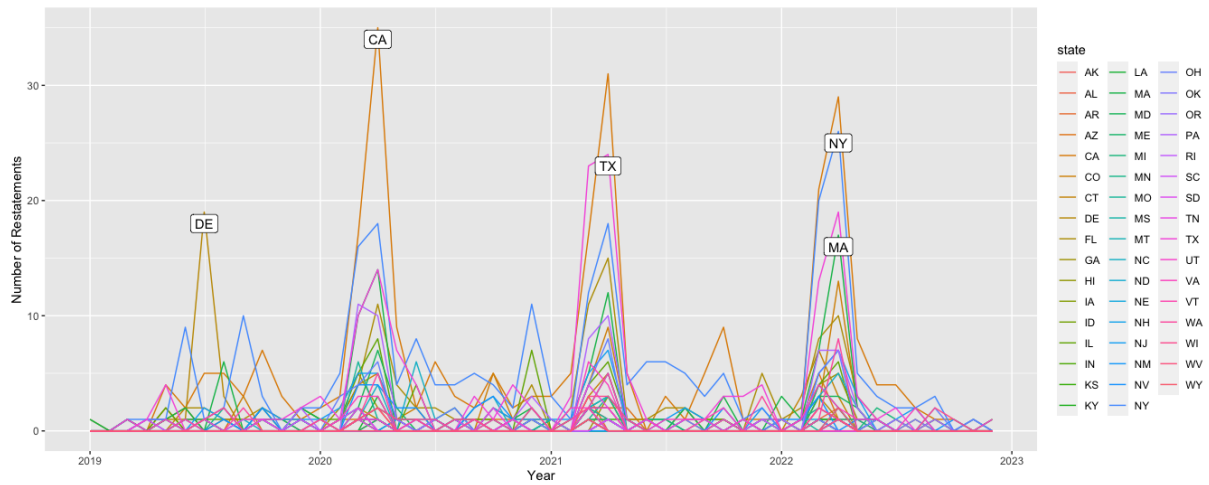


Figure 2: Number of Restatements by State over Time. The figure depicts how the number of audits that were subject to restatements evolve by state over time. California is the state with the highest number of audits that were subject to restatements per month, followed by New York, Texas, Delaware, and Massachusetts.

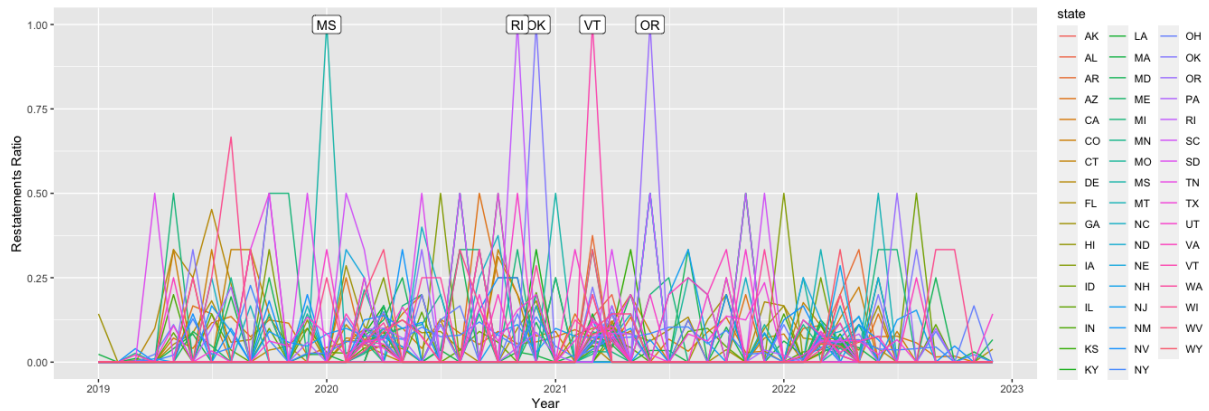


Figure 3: Restatement Rate by State over Time. The figure depicts how the number of audits that were subject to restatements over the total number of audits performed evolves by state over time. Mississippi is the state with the highest restatement rate, followed by Rhode Island, Oklahoma, Vermont and Oregon.

Figure 3 accounts for the fact that some states naturally have a higher number of audits performed per month, by looking at how the monthly restatement rate evolves by state over time. From the graph, it is noticed that no state has the highest restatement rate consistently during the observed time period. Although there is no obvious peak for the restatement rate during the first lockdown period (March and April of 2020), some states show a clear peak in their restatement rate in the period of the end of 2020 and beginning of 2021, which is characterized by the beginning of the "second wave" of Covid-19 (Johns Hopkins Medicine, 2021).

3.2.2 Independent Variable

During the Covid-19 pandemic lockdowns were enforced, which compelled companies and their employees into WFH. These pandemic induced lockdowns are used as a "natural experiment" to estimate the effect of WFH on audit quality, as during lockdowns it is certain that all employees were working remotely.

To do this, Covid related data from 01/01/2020 until 31/12/2022 was retrieved from the *Oxford COVID-19 Government Response Tracker* (Hale et al., 2021). This data set captures government policies related to closure and containment, health and economic policy, from 01/01/2020. Data on lockdown restrictions was retrieved.⁴

A lockdown is defined as having occurred if there was required closing of companies, or required working from home, for everyone in non-essential sectors. *LockdownDays* shows summary statistics for the number of days of lockdown per state, per month. Based on this variable, the variable *Lockdown*, was created, taking value one if in a certain state, there were at least seven days of lockdown in that month, and zero otherwise. Panel B of table 1 shows summary statistics for these.

3.2.3 Control Variables

While Covid induced lockdowns have led to working from home, it's also likely that it led to other changes that may have influenced audit quality. For instance, lockdowns have led to an economic recession (IMF, 2020), and, as Gallie et al. (2014) argue, economic recessions can lead to a deterioration in job quality. Moreover, increasing stress related to the spreading of the virus can distract auditors from their work, in turn decreasing the quality of audits performed.

In the estimated models, Covid specific characteristics and time-varying changes in a state's economy are controlled for. To do this, the number of Covid related deaths per state per month (*Deaths*), the average monthly personal income per capita (*PersonalIncomePerCapita*), and monthly unemployment rate per state (*UnemploymentRate*) are included in regressions.

Data on number of deaths due to Covid per month from 01/01/2020 until 31/12/2022 was retrieved from the Oxford COVID-19 Government Response Tracker (Hale et al., 2021).⁵ The number of deaths due to Covid per month, defined as *Deaths*, is the sum of all deaths by Covid, in a certain month, in a certain U.S.

⁴For the year 2019, it was assumed that there were no lockdown restrictions, in all U.S. states.

⁵For the year 2019, it was assumed that there were zero Covid related deaths per month, in all U.S. states

state. This variable is a measure of how dangerous the state of affairs regarding Covid was in a certain state, in a certain month. As Covid concerns are related to a lot of anxiety, this variable may capture decreases in audit quality through increased work stress. Figure 7, which can be found in Appendix A, depicts the evolution of *Deaths* over time.

Both *PersonalIncomePerCapita* and *UnemploymentRate* are used as measures of each state’s economic level. A higher economic level is related to better overall work quality. Therefore, it is also related to higher audit quality. Data for these variables was retrieved from the *U.S. Bureau of Economic Analysis*. Summary statistics for the control variables can be found in panel C of table 1.

| Panel A: Dependent Variable | | | | | |
|--------------------------------------|--------|-----------|-----------|----------|-----------|
| Variable | N | Mean | St. Dev. | Min | Max |
| RestatementRaw | 33,189 | 0.041 | 0.198 | 0 | 1 |
| Restatements | 2,399 | 7.617 | 15.338 | 0 | 35 |
| RestatementRate | 2,399 | 0.227 | 0.434 | 0 | 1 |
| Panel B: Independent Variable | | | | | |
| Variable | N | Mean | St. Dev. | Min | Max |
| LockdownDays | 2,399 | 9.169 | 12.921 | 0 | 31 |
| Lockdown | 2,399 | 0.309 | 0.416 | 0 | 1 |
| Panel C: Control Variables | | | | | |
| Variable | N | Mean | St. Dev. | Min | Max |
| PersonalIncomePerCapita | 2,399 | 49,941.36 | 28,007.08 | 9,121.81 | 84,972.00 |
| UnemploymentRate | 2,399 | 8.791 | 12.243 | 1.9 | 30.6 |
| Deaths | 2,399 | 3,117.5 | 6,383.83 | 0 | 14,523 |

Table 1: Summary Statistics. The table shows the number of observations, mean, standard deviation, minimum and maximum of all observations mentioned. Panel A refers to data on restatements, panel B to data on Covid lockdowns, and panel C on the control variables used.

3.3 Methodology

Here, the methods used to estimate the effect of working from home on audit quality will be discussed. The equations estimated are presented, and the assumptions under which these assess the effect of interest are discussed.

Figure 4 depicts a preliminary visualisation of the effect to be estimated.⁶ The figure shows how the number of restatements varies per lockdown status for all states, and highlights the variation in lockdowns over time and space used to identify the effect of WFH on audit quality. The peaks in number of restatements can be seen, just as in figure 2. In some states, there appears to be a higher number of restatements during

⁶Figure 8, which can be found in Appendix A, shows similar graphs, but for the restatement rate instead of number of restatements.

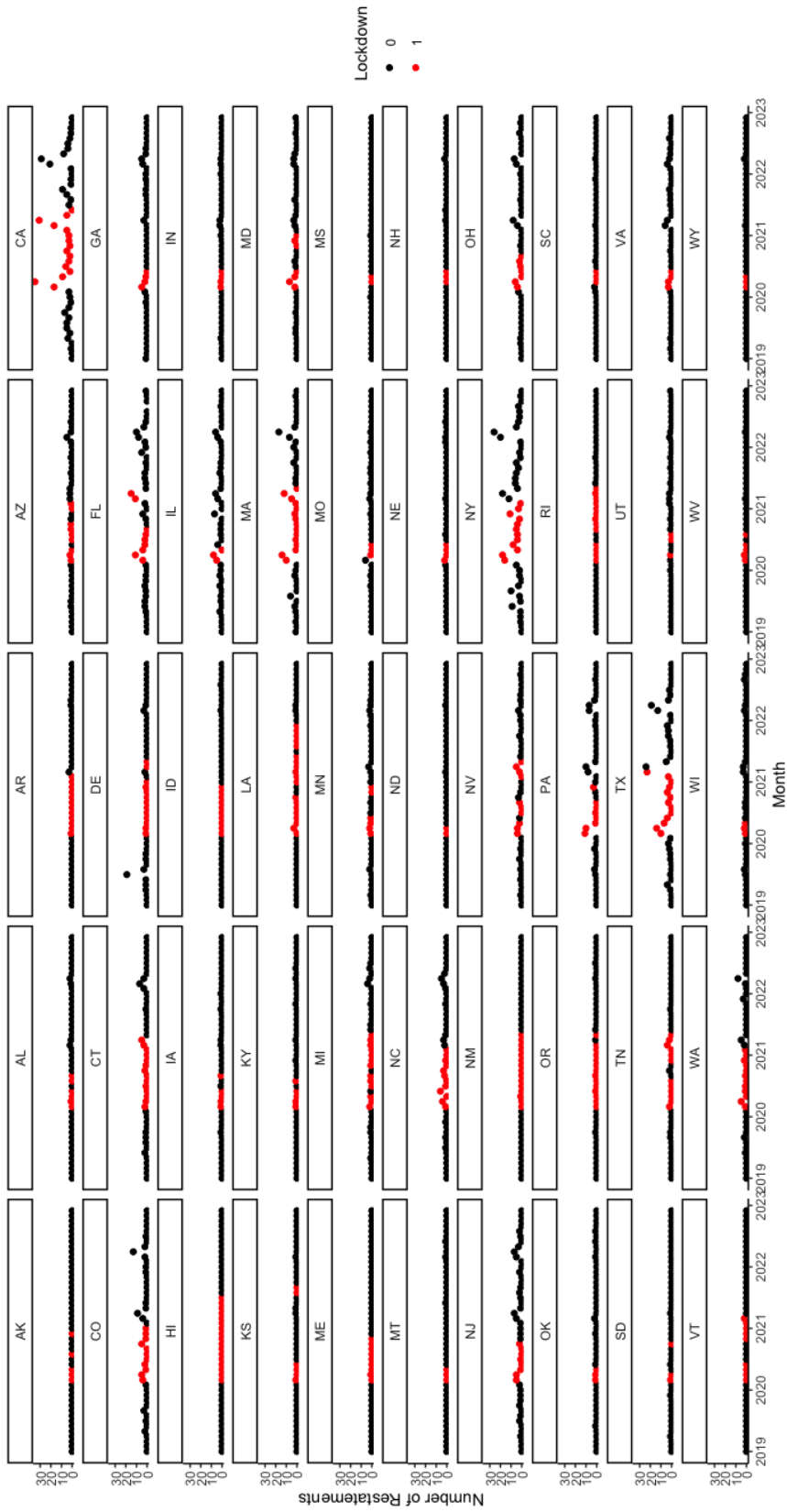


Figure 4: Number of Restatements by Lockdown Status. The figure shows how the number of audits that were subject to restatement varies given different lockdown status, for all U.S. states. Black dots represent the number of audits subject to restatements when lockdown was not in place, and red dots represent the number of audits subject to restatements when lockdown was in place.

lockdown months. It also seems that, over time, the number of restatements performed during a lockdown decreases. However, no clear conclusion of the effect of lockdowns on audit quality can be drawn. To be able to do this, regressions are performed.

3.3.1 Regression Models

The Covid-19 outbreak in the United States forced audits to be performed remotely. These pandemic induced WFH measures serve as an exogenous shock for audits performed in 2020. Jin et al. (2022) argue, in the context of China, that the assignment of branches to the treatment group is plausibly at random, as the imposition of lockdowns and different restrictions is unlikely correlated based on audit or client characteristics. However, it is recognized that the effect of Covid induced lockdowns on audit quality is not exclusively related to the WFH restrictions. A difference-in-differences specification will be used, to assess the relation between lockdown restrictions and audit quality.

Two different models are estimated to study the effect of lockdowns on audit quality. Firstly, a standard TWFE model is adopted, to study the effect of having lockdown restrictions in place on the number of restatements. Based on the regression modeled by Beck et al. (2010), the following equation is estimated:

$$Restatements_{st} = \alpha + \beta Lockdown_{st} + \theta X_{st} + S_s + T_t + \epsilon_{st} \quad (3.1)$$

In (3.1), $Restatements_{st}$ is the number of restatements in state s in month t (where $s = 1, \dots, 50$; $t = 01/2019, \dots, 12/2022$). S_s and T_t are vectors of state and month dummy variables that account for state and month fixed effects, and ϵ_{st} is the error term. The variable of interest is $Lockdown_{st}$, which is a dummy variable that equals one if in a given state, in a given month, there were at least seven days of lockdown restrictions. Therefore, a precisely estimated β indicates the impact of lockdown restrictions on number of restatements. So, a positive and significant β would suggest that lockdown restrictions exert a positive effect on the number of restatements. That is, working from home would result in lower audit quality, as hypothesized in **H1.1**. The opposite would be suggested if β takes a negative and significant value.

Equation (3.1) optionally includes X_{st} , a vector of state level control variables, namely, the GSP in state s in month t , and the number of Covid related deaths in state s in month t . This will be included in some specifications of the model, in order to control for concurrent macroeconomic and pandemic related effects that may influence the number of audits subject to restatements at the same time as lockdown restrictions occur.

One concern may be that the lockdowns change the number of audits in a month, leading to a change in the number of restatements that does not reflect a change in the average audit quality. To address this, the variable $RestatementRate$ is used as a dependent variable, instead of $Restatements$, within certain model specifications.

Next, the dynamics of the relation between lockdown restrictions and audit quality are studied. This is

done by including a series of dummy variables in the standard regression, to trace out the month-by-month effects of lockdown restrictions on the number of restatements. Particularly, these effects are studied six months before and after the closest lockdown restriction to when an audit was finalized. So, the sample size is reduced to a shorter time period, with 835 observations instead of 2,399. The following equation is estimated, based on Beck et al. (2010):

$$Restatements_{st} = \alpha + \sum_{j=-6, j \neq -1} \beta_j L_s^j + \theta X_t + S_s + T_t + \epsilon_{st} \quad (3.2)$$

Equation (3.2) estimates the dynamic effect of lockdowns on restatements. For each $Restatements_{st}$ observation, the closest lockdown is found. The L^j variables refer to the months before/after that particular lockdown. The reference period is $j = -1$, which is the month before the lockdown was introduced. In these equations, a precisely estimated, positive and significant β_1 would mean that in the first month after each lockdown, the quality of audits performed decreases, as hypothesized in **H1.1**. If this holds, and the coefficients of $L^j (j > 1)$ get closer to 0 as j increases, it would imply that the negative effect of lockdowns on audit quality becomes closer to zero over time, as hypothesized in **H1.2**. Persistent, negative, and significant β_j for when $j = 0$ would indicate that lockdowns lead to a long term improvement in audit quality, through reduction of number of audits subject to restatements.

Similarly, a precisely estimated, negative and significant β_6 would mean that the negative effect of imposed WFH due to lockdown restrictions on audit quality disappears after some months of adaptation in WFH. That is, given a precisely estimated equation, when the coefficients of $L^j (j > 0)$ decrease as j increases, there is evidence of a learning curve in WFH as hypothesized in **H1.2**. The same outcome and control variables used for model (3.1) are also used for model (3.2).

It is likely that restatements within the same state are correlated. Clustering the standard errors at the state level accounts for this potential correlation and provides more accurate estimates of the standard errors. Therefore, and following literature with similar methodology (Gong et al. (2022b), Bailey and Goodman-Bacon (2015), Zipperer et al. (2019), Beck et al. (2010)), the standard errors are clustered at the state level for all models.

3.3.2 Assumptions

The models above presented aim to measure the effect of WFH policies on audit quality, by exploiting state lockdown orders during the Covid-19 pandemic, given that WFH was required by such orders. The validity of these estimates rests on three main assumptions.

Firstly, that the lockdowns only influence audit quality through WFH practices. This is an arguable assumption. It is recognized that Covid related anxieties, as well as other health issues that occur at the same time as lockdowns, could have also had an impact on audit quality. Given that these other channels

likely reduced audit quality, this would lead to a positive bias on the estimated effect of restatements. That is, the effect of WFH on audit quality would be overestimated. However, it is expected that the largest effect on audit quality during lockdowns is the WFH orders, as it is the most drastic change in how audits were performed during the lockdown period.

Secondly, it is assumed that there is no anticipation of lockdowns. If auditing companies can anticipate each lockdown, the model presented could be biased. This is because, if lockdowns can be anticipated, companies could alter their normal logistics towards a higher amount of work before the lockdown and a lower amount of work during the lockdown, as to avoid the lockdown imposed working from home. In model (3.2), the coefficients for L^j , when $j < 0$, allow to test for these anticipation effects. If the coefficients remain stable from $j = -6$ until $j = -1$, then audit quality doesn't significantly change before the lockdown. This would suggest no anticipation of lockdowns, or at least no significant change in the variable of interest given a possible anticipation.

Lastly, it is assumed that there are no state to state spillovers. Covid infections could be easily spread within neighbouring countries, and therefore, Covid related deaths would increase for both states at a similar time. To control for this, the variable *Deaths* is added to a second version of each model. Although neighbouring states tend to have similar characteristics, it is unlikely that there is a spillover of audit quality from one state to another. Audit quality results from competent auditors who perform audit procedures well. It is unlikely that competence of employees spills from one state to another.

3.4 Results

Here, the results of the models previously described will be analysed. The analysis begins by examining the effects of lockdown restrictions on audit quality. Afterwards, the dynamic effect of lockdown restrictions on audit quality is explored.

3.4.1 The Effect of Lockdown Restrictions on Audit Quality

First, the results of a TWFE regression, following (3.1) are analysed. This allows to study the possible average effect of WFH on audit quality, through lockdown restrictions.

Table 2 shows the results for a TWFE regression following (3.1), with robust standard errors clustered at the state level. For column (1), the coefficient for *Lockdown* implies that the number of audits that were subject to restatements increase, on average, by 0.098 when these audits were concluded in a month were a lockdown was in place, compared to when it was not, *ceteris paribus*. However, this estimate is not statistically significant. For column (2), the coefficient for *Lockdown* implies that, controlling for Covid specific characteristics and time-varying changes in a state's economy, the number of audits that were subject to restatements increases by 0.011 when these audits were concluded during a lockdown, compared to when it was not, on average, *ceteris paribus*. The estimate is also statistically insignificant. For regressions (1) and (2), although the coefficients for *Lockdown* are statistically insignificant, there is no precisely estimated null

effect of lockdown on the number of audits that were subject to restatements, *ceteris paribus*.

| | <i>Dependent variable:</i> | | | |
|-------------------------|----------------------------|--------------------|------------------|-------------------|
| | Restatements | | RestatementRate | |
| | (1) | (2) | (3) | (4) |
| Lockdown | 0.098 (0.158) | 0.011 (0.147) | 0.001 (0.010) | 0.0003 (0.011) |
| PersonalIncomePerCapita | | 0.0002 (0.0001) | | -0.000 (0.000) |
| UnemploymentRate | | 0.087** (0.044) | | 0.001 (0.002) |
| Deaths | | 0.0001 (0.0001) | | 0.000 (0.000) |
| Observations | 2,399 | 2,399 | 2,399 | 2,399 |
| Adjusted R ² | 0.198 | 0.203 | 0.012 | 0.012 |

*p<0.1; **p<0.05; ***p<0.01

Table 2: Regression Results TWFE. The table presents estimates of the impact of lockdown restrictions on audit quality. The model controls for state and year fixed effects. Standard errors are adjusted for state level clustering and appear in parentheses.

For columns (3) and (4), the coefficient for *Lockdown* is very close to zero. Moreover, the standard errors are comparatively small. According to these results, it is concluded that there is, on average, no effect of *Lockdown* on the Restatement Rate, *ceteris paribus*.

A large effect of lockdown restrictions on the number of audits subject to restatements can be ruled out. However, large standard errors for the coefficient of *Lockdown* (in columns (1) and (2)) indicate that there might be some variation in the effect of *Lockdowns* on *Restatements* throughout the time. A negative or positive effect could be averaged out by analysing a broad time horizon. This being, there is not enough evidence to either accept or reject hypothesis **H1.1**.

3.4.2 Dynamic Effects of Lockdown Restrictions on Audit Quality

Table 2 shows results for the overall average effect of lockdowns in audit quality. This is because, in (3.2), the *Lockdown* variable is a measure of the whole time period when lockdowns took place. Therefore, the equation measures the average effect of all lockdowns on audit quality. However, there could be a learning curve effect made unnoticed by looking at average effects. That is, the first month of lockdown could have a negative effect on audit quality that then dissipates in subsequent lockdown months. To account for this, a dynamic model of the effect of lockdowns will now be studied.

Table 3 shows the results for a TWFE regression, following (3.2). These are estimates of the dynamic effect of audit restrictions on audit quality. For all displayed regressions using *Restatements* as a dependent

variable, the coefficients for L^{+1} are positive and statistically significant at a 10% level. For column (1), the coefficient for L^{+1} implies that in the second month after a lockdown, the number of audits subject to restatements increase by 0.883, on average ceteris paribus. For column (2), the coefficient for L^{+1} implies that, controlling for Covid specific characteristics and time-varying changes in a state’s economy, in the second month after a lockdown, the number of audits subject to restatements increase, on average, by 0.904, ceteris paribus. However, when using *RestatementRate* as a dependent variable, the coefficients for L^{+1} are statistically insignificant, but the the coefficients for L^{+2} are statistically significant at a 10% level. For column (1), the coefficient for L^{+2} implies that, in the third month after a lockdown, the restatement rate increases by 0.067. For column (2), the coefficient for L^{+2} implies that, controlling for Covid specific characteristics and time-varying changes in a state’s economy, in the third month after a lockdown, the restatement rate increases by 0.066. Overall, there is evidence for a decrease in audit quality that, on average, in the first period of lockdown restrictions, these restrictions increase both number of audits subject to a restatement, and restatement rate, ceteris paribus. However, for all displayed regressions, the coefficients for L^0 are not statistically significant. This suggests that there is no effect of lockdown on audit quality during the first month of lockdown restrictions, relative to the previous month.

The coefficients for all periods after the initial lockdown month steadily decrease as j increases. However, in general for all regressions, these coefficients are statistically significant. This suggests that the effect of lockdowns on audit quality dissipates as time passes, as hypothesized in **H1.2**.

The coefficients for periods before the initial lockdown month stay relatively similar as j changes. Particularly, it is noted that the coefficients do not significantly change as j gets closer to 0. This is evidence that there was no anticipation of lockdowns, which assures the holding of the second hypothesis described in section 3.3.2.

Figure 5 refers to column (1) of table 3. It depicts the dynamic effect of WFH, through lockdown restrictions, on the quality of audits performed, measured through audits subject to restatements. It illustrates the relationship between lockdown restrictions and audit quality, within a specific month and state. A time frame of 13 months is considered, ranging from six months prior to the implementation of the initial lockdown restriction to six months thereafter. The lines displayed in the figure represent 90% confidence intervals that have been adjusted to account for clustering at the state level.

A positive effect of lockdowns on number of audits subject to restatements during the second month of lockdown is apparent. However, during the previous month, a large effect of lockdown restrictions on audit quality is ruled out. This lag could be explained by measuring motives of the dependent variable. A date is attributed to each audit, assuming the audit was performed right on this date. However, this date is the deadline for delivering the file corresponding to each audit. Due to long audit processes, audits are worked on several weeks before deadlines. So, any effect studied could be lagged by one month. After the second month of lockdown, the impact of lockdown on restatements decreases, and continues doing so until the sixth month after the first lockdown.

| | <i>Dependent variable:</i> | | | |
|-------------------------|----------------------------|---------------------|--------------------|-----------------------|
| | Restatements | | RestatementRate | |
| | (1) | (2) | (3) | (4) |
| L^{-6} | -0.374 (0.759) | -0.297 (0.701) | -0.058 (0.045) | -0.062 (0.045) |
| L^{-5} | -0.467 (0.702) | -0.381 (0.662) | -0.015 (0.029) | -0.018 (0.029) |
| L^{-4} | -0.242 (0.456) | -0.185 (0.442) | 0.043 (0.031) | 0.041 (0.031) |
| L^{-3} | 0.274 (0.263) | 0.318 (0.269) | 0.125** (0.052) | 0.124** (0.052) |
| L^{-2} | 0.035 (0.180) | 0.052 (0.183) | 0.021 (0.044) | 0.021 (0.044) |
| L^0 | 0.101 (0.374) | 0.111 (0.378) | 0.010 (0.020) | 0.009 (0.020) |
| L^{+1} | 0.883* (0.503) | 0.904* (0.528) | 0.043 (0.032) | 0.043 (0.032) |
| L^{+2} | 0.334 (0.227) | 0.359 (0.231) | 0.067* (0.039) | 0.066* (0.039) |
| L^{+3} | 0.169 (0.287) | 0.193 (0.296) | 0.023 (0.018) | 0.022 (0.018) |
| L^{+4} | 0.205 (0.309) | 0.219 (0.318) | 0.077** (0.035) | 0.077** (0.035) |
| L^{+5} | -0.225 (0.250) | -0.215 (0.251) | 0.003 (0.021) | 0.002 (0.021) |
| L^{+6} | -0.229 (0.239) | -0.227 (0.247) | 0.007 (0.023) | 0.007 (0.023) |
| PersonalIncomePerCapita | | 0.0003 (0.0002) | | -0.00001 (0.00001) |
| UnemploymentRate | | 0.033 (0.035) | | 0.002 (0.002) |
| Deaths | | 0.00003 (0.0002) | | -0.00000 (0.00001) |
| Observations | 835 | 835 | 835 | 835 |
| Adjusted R^2 | 0.156 | 0.158 | -0.023 | -0.025 |

*p<0.1; **p<0.05; ***p<0.01

Table 3: Regression Results DE. The table presents estimates of the dynamic effect of lockdown restrictions on audit quality. The model controls for state and year fixed effects. Standard errors are adjusted for state level clustering and appear in parentheses. The Adjusted R^2 is negative for regressions using *RestatementRate* as a dependent variable, because for these, the R^2 is small relative to the ratio of parameters to cases.

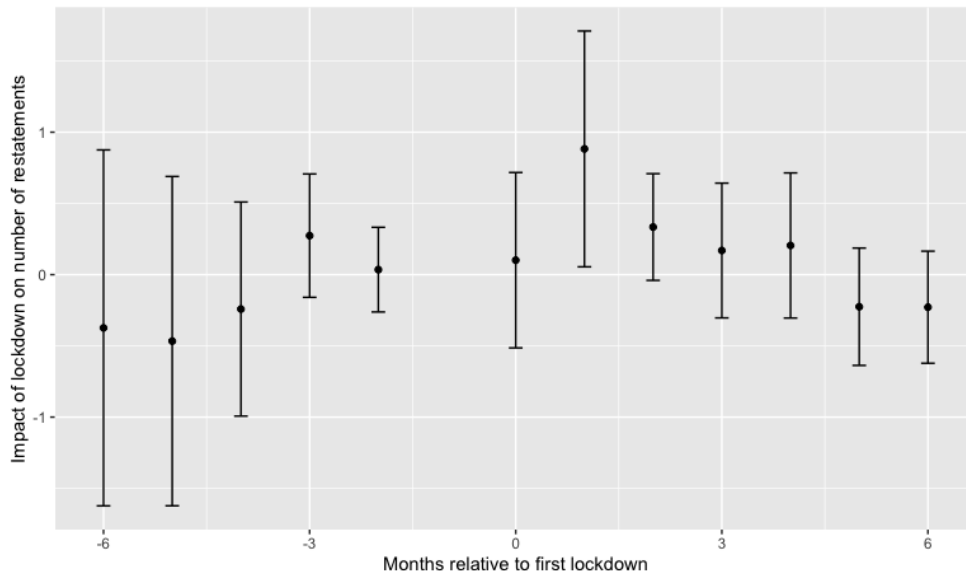


Figure 5: Dynamic impact of lockdown restrictions on number of restatements. The figure refers to column (1) of table 3. It plots the impact of lockdown restrictions on the number of restatements that occurred in a certain month, in a certain state. A 13-month window is considered, spanning from six months before the first lockdown restriction was imposed until six months after such. 0 on the x-axis corresponds to the first month of lockdown. The lines represent 90% confidence intervals, adjusted for state-level clustering. Specifically, estimated coefficients from (3.2). are reported

The effect of lockdown restrictions on number of audits subject to restatements on the months prior to the first lockdown is steady. This is evidence against the possible anticipation of lockdowns.

The coefficients intervals for L^{+6} and L^{+5} are comparatively large, due to the smaller number of observations in these months.

3.5 Discussion

In this section, the previously presented results are discussed. An analysis of the implications and limitations of how WFH can affect audit quality is performed. Following, the results presented are compared to those in the existing literature. The implications and limitations of the TWFE model (which follows (3.1)) and the Dynamic Effects model (which follows (3.2)) are discussed.

Four TWFE regressions are performed, following (3.1), with robust standard errors clustered at the state level. Overall, it was observed that the coefficients for the *Lockdown* variable are, albeit positive, statistically insignificant in all regressions. These results are robust for both dependent variables used (*Restatements* and *RestatementRate*). This implies that, on average across all lockdown months, a lockdown being in place in the month that an audit was finished has no large effect on the quality of the underlying audit. However, this regression looks only at the overall average effect of lockdowns on audit quality. Averaging this effect over a large time period could therefore cause the results to be insignificant. Therefore, we shorten the time horizon, and look at the effect of lockdowns on audit quality for different months, in a second model.

In this second model, an estimation of the dynamic effect of lockdowns on audit quality was performed, following (3.1), and using *Restatements* as the dependent variable. It was concluded that during the first month of lockdown, a significant effect of lockdown on audit quality is ruled out. However, during the second month of lockdown, there is a negative effect of lockdown restrictions on audit quality. The non significance of the effect during the first month can be explained by a lag in the delivery of audits performed. That is, audits that were performed in the first month of lockdown can be delivered in the second month, and so on. It was also concluded that in the following months (from 3rd to 6th month after the lockdown started), this negative effect dissipates. Similar conclusions are drawn for the regression model using *RestatementRate* as the dependent variable.

The literature reviewed in section 2.1 didn't provide a clear conclusion on the effect of pandemic impelled WFH on audit quality. While some authors argue that remote working decreases audit quality (Appelbaum et al. (2020), Jin et al. (2022), Gong et al. (2022a)), others argue that it increases audit quality (Saputro and Mappanyukki (2022), Suhendri et al. (2022)), or that it has no effect on it (Eulerich et al., 2022). Yet, there is a general agreement that some factors, such as creativity, good practices, and good supervision, hold off the possible negative effect of WFH on audit quality. There might be an adaptation period after implementation of WFH to guarantee these factors take place. In this component of the thesis, it was concluded that, although there is no large average effect of lockdown restrictions on audit quality, implementing WFH due to lockdown restrictions slightly decreases audit quality at first, but this effect dissipates shortly after. Combining these findings with the literature reviewed, there is still no clear overall effect of WFH impelled by lockdown restrictions on audit quality. However, there is an initial small negative effect of lockdown restrictions on audit quality, which dissipates after two months, likely due to adaptation to remote auditing. So, hypothesis **H1.1** is not rejected nor accepted, and hypothesis **H1.2** is accepted.

If certain conditions sustain, the results suggest that WFH imposed by lockdown restrictions slightly decreases quality of audits performed at first, but this small negative effect disappears after two months. However, there are limitations in this study which could restrict these results.

One issue regards to the model studying the dynamic effect of WFH on audit quality only. Looking at figure 4, it is recognized that some lockdowns last less than six months. However, when (3.2) is estimated, the effect of lockdown restrictions on the six months before and after they were imposed is taken into account. Therefore, it might be the case that, for certain observations of this dynamic effect, certain months don't have lockdown restrictions in place. That is, the effect of lockdown restrictions on audit quality could be estimated for months when no lockdown restriction was in place.

As mentioned in section 3.3.2, the validity of this analysis rests on the assumptions that lockdowns only influence audit quality through WFH practices, that there is no anticipation of lockdowns, and that there are no state to state spillovers.

It is recognized that lockdowns are inevitably related to other factors that might influence the quality of audits performed, such as anxieties caused by the pandemic. These would decrease the quality of audits, and

this effect could be captured by the lockdown effect. That is, it is likely that the found effect is overestimated. However, the estimation of the DE model takes into account different lockdowns, which happened in different time periods. It is argued that pandemic related anxieties calm down over time. This being, lockdowns further away from the start of the pandemic aren't as affected by these factors. Therefore, the DE model presents results which control a part of this limiting factor.

The no anticipation of lockdowns assumption is assured by figure 5, which shows a steady impact of lockdown on number of restatements in the six months before the lockdown. The assumption of no state to state spillover effects is rested by adding a control variable (*Deaths*) for possible Covid spillover effects. It is recognized that there might be some knowledge spillover effects from one state to another. However, it is argued that these aren't significant, due to the particularity of factors that influence audit quality.

Although these assumptions are conceivable, there are other estimating issues to be addressed. Namely, regarding the the variables of interest. It is recognized that the measure of audit quality used, restatements, is flawed. A restatement is a revision of one or more of a company's previous financial statements to correct an error. Rajgopal et al. (2021) state that restatements are a great proxy for audit quality, as it directly speaks to the quality of the audit performed. Still, the authors recognize it to be a flawed measure, as the absence of a restatement does not guarantee audit quality. They write that "even the most carefully executed audit cannot guarantee detection of fraud" (p. 570).

The main assumption in which the study rests on is that working from home can be measured through lockdown restrictions. The Covid-19 outbreak had forced governments to impose lockdown restrictions. These restrictions included mandatory remote work for all but essential sectors. Therefore, lockdown restrictions forced audits to be performed remotely. However, some companies were already working with models that included WFH before the pandemic started. Moreover, and as previously discussed, lockdown imposed WFH resulted in companies later implementing hybrid models of work, which included WFH a certain amount of days per week. Therefore, although there is a correlation of lockdown restrictions with working from home, one is not a measure of the other.

4 The Effect of WFH on Self-Reported Job Satisfaction: Evidence from a Big-4 Company

In this section, the effect of implementing models of working which include the option for employees to work from home on job satisfaction in the auditing industry is studied. Firstly, theory on the subject is discussed, and the hypothesis to be tested is presented. The data gathered is then described, and descriptive statistics are analysed. Next, the methodology employed as well as the assumptions in which the model relies are explained. Results are then analysed. Lastly, limitations and implications of the results are discussed.

4.1 Theory

Before the Covid pandemic, most employees were required to work from their company's office on all working days. However, the pandemic sparked a change in many companies' working policies. After going through lockdowns where working from home was mandatory, many companies started experimenting with hybrid models of working. In these models, employees can choose to work from home a certain amount of days per week. In section 2.2, where literature on how working from home affects job satisfaction is analysed, it was concluded that job satisfaction increases when employees are given the option to work from home, in a hybrid manner. It is conjectured that this effect is the same in the auditing industry. That is, implementing WFH should positively affect overall job satisfaction of employees, in the auditing industry. Therefore, the following hypothesis will be tested:

H2: In the auditing industry, job satisfaction increases when the work from home capacity increases.

4.1.1 Measuring Job Satisfaction

In the study conducted for this thesis, job satisfaction is measured through two distinct ways. The first one is based on Kowalski et al. (2022), who have developed a moderated mediation model to explain the relation between work from home productivity and job satisfaction. These authors created measures of Work-Life Balance (WLB), Work Stress (WS), Job Satisfaction (JS), Work-Personal Life Enhancement (WPLE) and Emotional Exhaustion (EE). Each of them is built by assembling multiple constructs, using a five-point Likert scale ('5' = strongly agree; '1' = strongly disagree) in a questionnaire type survey to measure them. These measures were adopted, and their constructs were tweaked to better fit this study.⁷ The measures and constructs used can be found in table 6, in Appendix B. Each measure is computed by the average of its respective constructs.

Work-Life Balance is concerned with how individuals can maintain the equilibrium between the demands from work and non-work activities, and promote their priorities at both work and home without sacrificing.

⁷Audit specific job satisfaction constructs such as stress during peak seasons were added, and irrelevant constructs for the auditors were removed, such as satisfaction regarding workers' supervisors.

This equilibrium is a self-determined and self-defined state which varies across individuals. An increase in non-work related demands can damage WLB. Work-Life Balance increases job satisfaction.

Work Stress can arise from job conflict, role conflict, non-collegiality and increasing demands from supervisors. Increased workload associated with peak seasons can increase WS. Work Stress decreases job satisfaction.

Job satisfaction is a widely studied variable in the literature on organizational behaviour and personnel psychology (Warren et al., 2001). It is a global measure that involves an individual's evaluation of the job situation and various aspects of the job.

Work-Personal Life Enhancement relates to how positive experiences in work and non-work related aspects of life can result in synergies. The outcome of a positive WPLE is higher job satisfaction.

Emotional Exhaustion is a component of burnout. Employees can feel overburdened by work, resulting in lack of energy and exhaustion. This would result in lower job satisfaction.

As a second way of measuring overall job satisfaction, individuals are asked about how the increased capacity to work from home affects their work-life balance. Employees are directly asked "Do you feel that the ability to WFH deteriorates your work-life balance?". This allows to get their straight-forward perspective on the subject. The responses were recorded on a five point scale, from "Definitely yes" to "Definitely no".

4.2 Data

This sections starts by describing the data gathering methods employed for this component of the thesis. The collected data is briefly analysed, and descriptive statistics are presented.

4.2.1 Data Gathering

For this component of the study, data is gathered through a questionnaire type survey, which can be found in Appendix B. The survey is carried out at a Big-4 Auditing company in the Netherlands, from 24/03/2023 until 28/04/2023. It was sent via e-mail to individuals working at the company. The main inclusion criteria was that the participant was employed there since at least before 2020. Before the pandemic, which started in 2020, the company didn't have hybrid models of WFH in place. After the pandemic, it implemented a model of working that allowed to WFH. Therefore, surveying individuals about this change allows for a comparison between WFH styles. There were 624 respondents in total. This study used a sample of 203 individuals who were working at the company before 2020.

The aim of the survey is to understand how employees' job satisfaction changes with the newly adopted hybrid models of working, which include working from home. The individuals are asked how many days per week they worked from home, on average, before and after the pandemic. This allows to compute the change in number of days working from home, which in a later stage will be used to estimate the causal effect of WFH on job satisfaction. The major questions in the survey are based on the job satisfaction measures described in the previous section. Survey respondents are asked to which extent they agree with

different sentences, on a scale from one (“Strongly disagree”) to five (“Strongly agree”). Each of the sentences is a construct of a measure of Job Satisfaction. Each measure is computed by calculating the average of the points correspondent to the responses for each construct. The measures of job satisfaction used are self-assessment measures, which could result in a bias in responses. However, the survey is chosen as a tool to study variables such as one’s job satisfaction and work-life balance, as these are extremely personal and individualized.

The survey also collected information about various individual characteristics, in the form of categories. Variables observed were age (five categories), gender (four categories), with whom the individual lives with (six categories), in which department of the company they work at (eight categories), their position in the company (seven categories), and their yearly salary (five categories). Individuals were also asked whether they were working at the company before 2020. If the response was “No”, they were directed towards the end of the survey. Table 7 in Appendix B shows summary statistics for the number of days per week where individuals work for home before and after the pandemic, along with the change in number of days WFH from before to after the Covid pandemic.

4.2.2 Descriptive Statistics

In this section, descriptive statistics are presented, and the data is analysed. First, we look at individual level characteristics of respondents. Then, insights into the respondents’ perspectives on how the WFH policy changes in the company affected their job satisfaction are analysed. A foundation for the subsequent sections is established, where a regression analysis to estimate the causal effect will be performed.

It is plausible that the survey respondents are representative of the population. The surveyed branch of the company consists mostly of employees younger than 30; and 64% of the survey respondents are below 30 years of age. 59% of respondents identify as "Male", 38% identify as "Female", 0.05% identify as "Non binary / Third gender", and the rest didn’t respond. About 64.5% of respondents live with their partner, 17.7% live alone, and 13.8% live with their children. 58.6% of respondents are auditors. Table 8 in Appendix B shows more detailed descriptive statistics for surveyed individuals’ characteristics.

Figure 6 shows graphical representations of the survey responses to each measure, and the respective constructs. Survey respondents were asked to rate their level of agreement with a series of statements, with each statement representing a different construct of the Work-Life Balance, Work Stress, Job Satisfaction, Work-Personal Life Enhancement, and Emotional Exhaustion measures. A skewness of the histograms to the right represents general agreement to the construct. If the measures’ constructs all reflect agreement, it suggests that the measure increases with increased WFH capacity.

Survey results are now analysed in a general manner, through figure 6 and table 4. Averages and distributions of each construct of the job satisfaction measures previously described are observed. This allows for an overview of employees’ perspectives on WFH, and how WFH affects their job satisfaction.

The Work-Life Balance measure aims to estimate the easiness of maintaining the equilibrium between

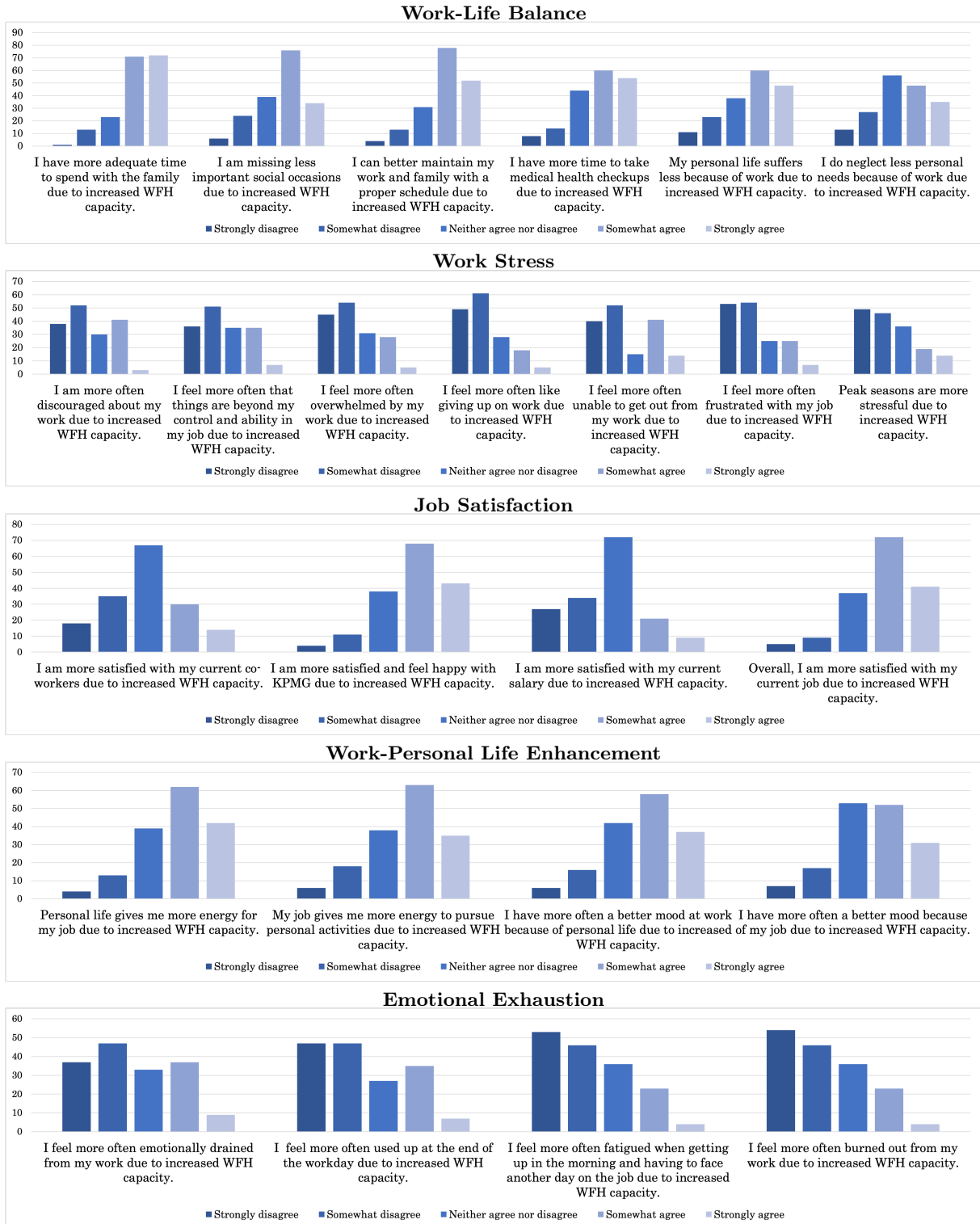


Figure 6: Measures and their constructs. The figures show graphical representations of five measures of Job Satisfaction and their respective constructs. Survey respondents were asked to rate their level of agreement with a series of statements, with each statement representing a different construct of the WLB, WS, JS, WPLE, and EE measures. Each construct for each measure is represented by a histogram that displays the distribution of responses obtained.

the demands from work and non-work activities. In general, it seems that employees feel that increased WFH capacity has allowed for a better Work-Life Balance, as the histograms are skewed towards the right, meaning most employees "Somewhat agree", or "Strongly agree" with the constructs. Employees feel that the increased WFH capacity implemented by the company allowed them to spend more time with their families, to miss less important social occasions, and to better maintain work and family with a proper schedule. However, employees feel that increased WFH capacity doesn't necessarily lead to more time for medical checkups, to less personal suffering because of work, or to less mistreatment of personal needs.

Work Stress relates to the harmful responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Generally, the responses are more skewed towards increased WFH capacity, as most respondents either disagree or strongly disagree with the constructs. Workers tend to disagree that the increased WFH capacity leads to feeling more overwhelmed, more often like giving up, or more often frustrated with their job. Workers also agree that peak seasons are not more stressful, or even less stressful, due to increased WFH capacity. However, there isn't a consensus on how increased WFH capacity affects feelings of discouragement towards work, nor on if it makes it harder to get out from work.

Job Satisfaction is a general measure that involves an individual's evaluation of the job situation. Mostly, it seems that employees feel at least as satisfied with their job due to increased WFH capacity, as most respondents answered "Neither agree nor disagree", "Somewhat agree", or "Strongly agree" to the constructs. Workers are generally more satisfied with the company and universally with their job due to increased WFH capacity. Even so, satisfaction with their co-workers and their salary doesn't increase due to WFH capacity.

Work-Personal Life Enhancement evaluates how one's job can increase their satisfaction with their personal life, and vice-versa. It seems that, generally, respondents believe that WPLE increases with increased WFH capacity, as the histograms are skewed towards the right. Particularly, they believe that personal life allows for more energy for their job, and that their job gives more energy for personal life activities due to increased WFH capacity. Respondents also acknowledge that their mood is at least as good both at work due to personal life, and in their personal life due to work, because of this.

Emotional Exhaustion measures lack of energy and motivation. Survey respondents tend to feel less or at least as emotionally exhausted due to increased WFH capacity. The histograms for both general emotional drain and feeling more often used up at the end of the workday due to increased WFH capacity are somewhat evenly distributed across "Strongly disagree", "Somewhat disagree", "Neither agree nor disagree", and "Somewhat agree". However, respondents seem to feel less often fatigued in the beginning of a work day and less often burned out due to increase WFH capacity. This can be confirmed by the skewness towards the left of the histograms for these constructs.

Table 4 shows summary statistics for the second measure of overall job satisfaction. For this, employees are asked about how the increased capacity to work from home at their company affects their work-life balance. On average, individuals agree that the ability to WFH deteriorates their work-life balance. This would indicate that implementing WFH would decrease work-life balance, in turn decreasing job satisfaction.

| Variable | N | Mean | Median | St. Dev. | Min | Max |
|-------------------|-----|-------|--------|----------|-----|-----|
| Self-Reported WLB | 197 | 3.695 | 4 | 1.446 | 1 | 5 |

Table 4: Summary Statistics for Self-reported Work-Life Balance during WFH. The table reveals summary statistics for individual’s self reported work-life balance during working from home. The individuals were asked "Do you feel that the ability to WFH deteriorates your work-life balance?", and their responses were recorded on a five-point Likert scale ('5' = strongly agree; '1' = strongly disagree). The number of observations, mean, standard deviation, minimum and maximum of Lockdown days is exhibited.

Increased WFH capacity seems to increase overall satisfaction, through higher Work-Life Balance, Job Satisfaction, and Work-Personal Life Enhancement, and lower levels of Work Stress and Emotional Exhaustion. This is evidence for the hypothesis that job satisfaction increases with increased WFH capacity, that is, when employees are allowed to work from home (**H2**). However, the self reported measure of job satisfaction shows evidence for decreased work-life balance during WFH. The questions were constructed to try to estimate the causal effect of increased WFH capacity on each of the measures. However, the histograms and table only give an estimation of the possible correlations between variables. To better understand the results, and better estimate the possible effect of WFH on job satisfaction, the following section covers more precise methods to study this subject.

4.3 Methodology

Here, the methods used to estimate the effect of working from home on job satisfaction are presented. The assumptions under which these methods assess the real effect are discussed.

4.3.1 Regression Model

A formal analysis of the effect of increased WFH capacity on job satisfaction is performed. In the survey, individuals are asked how many days per week they were working from home before the pandemic, and how many days per week they are now working from home. These differences in exposure to WFH are captured by the variable *Change*, which measures each individual’s change in number of days working from home per week. For an individual k who was not working from home before 2020, and is now working from home two days per week, $Change_k = 2$. A histogram of this variable can be found in figure 9 in Appendix B.

Through linear regressions, the following equation is estimated:

$$Satisfaction_i = \delta + \gamma Change_i + \psi X_i + \omega_i \tag{4.1}$$

Here, δ is the constant. $Satisfaction_i$ is a measure of individual job satisfaction, $Change_i$ is the individual’s change in number of days per week working from home, and ω_i is the error term. X_i is a vector for individual control variables; namely, age, gender, whom they live with, in which department they work at, dummies for their position in the company, and for their yearly salary. The coefficient γ indicates the

relation between an increased number of days working from home, and job satisfaction. Therefore, a positive and significant γ would suggest a positive relation between WFH and job satisfaction, confirming **H2**.

Equation (4.1) is estimated using six different measures of job satisfaction. First, using the five measures based on Kowalski et al. (2022) (WLB, WS, JS, WPLE, and EE); and then, the self perception measure.

4.3.2 Assumptions

The validity of the results following the methodology presented rests on a few assumptions. First is the assumption that the measures of job satisfaction employed are accurate. Particularly, that these do not suffer from self-reporting biases that arise due to gathering data through a survey. This would influence the accuracy of the survey results. Specifically, the data gathered from the survey could suffer from social desirability bias, recall bias, and the "halo effect". Social desirability bias happens when respondents feel compelled to answer questions in manners that align with social norms or expectations, rather than their true feelings or experiences. In this context, individuals could feel pressured to report higher levels of job satisfaction to obey to societal or organizational norms, leading to an overestimation of job satisfaction levels. Recall bias is reflected in the difficulty to recall past experiences, which could result in inaccuracies or inconsistencies in responses and affect the reliability of the data. The "halo effect" could occur if respondents' overall opinion on working from home influences their responses to related questions. If individuals would have an overall positive perception of WFH, they may rate various aspects related to job satisfaction more positively, regardless of their actual experiences.

The validity of the results also rests on the assumption that the sample surveyed is representative of the auditing population. Moreover, in the survey, there are some missing observations due to non-response of some questions. If the missing responses are not at random, that is, if the probability of missingness is related to unobserved factors or the missingness itself is systematic, the analysis could be suffering from bias. Although this is a possible issue, it is argued that the missing observations are of a small number, and therefore shouldn't raise a bias issue.

4.4 Results

In this section, the effect of working from home on job satisfaction is analysed. Regressions are performed, according to the methodology presented in the previous section, to estimate the real effect of increasing number of days WFH instead of on-site on job satisfaction. The results of the regressions are interpreted.

The results for regressions following (4.1) are presented in table 5. A focus is taken on the regressions for which the coefficient for *Change* is statistically significant (columns (3) and (4)). Column (3) depicts the results of a TWFE regression following (4.1), with *WS* as a dependent variable. The coefficient for *Change* implies that, for individuals that started to work from home instead of from the office one extra day per week, Work Stress decreases, on average, by 0.129 points, ceteris paribus. This estimation is statistically significant at a 1% level. This suggests that, on average, an increase in the amount of days working from

home resulting from increased WFH capacity after Covid is associated with a decrease in Work Stress felt by employees. Column (4) depicts results for the same model, using *JS* as a dependent variable. In this regression, the coefficient for *Change* implies that, for individuals that started to work from home instead of from the office one extra day per week, Job Satisfaction increases, on average, by 0.076 points, ceteris paribus. This estimate is statistically significant at a 10% level. This hints that, on average, an increase in the amount of days working from home resulting from increased WFH capacity after Covid, is associated with an increase in employees' Job Satisfaction.

| | Dependent variable: | | | | | |
|-------------------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------------------|
| | PERCEPTION | WLB | WS | JS | WPLE | EE |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Change | 0.099 (0.069) | 0.054 (0.041) | -0.129*** (0.041) | 0.076* (0.044) | 0.027 (0.054) | -0.032 (0.050) |
| Constant | 4.134*** (0.660) | 3.886*** (0.378) | 1.835*** (0.317) | 4.375*** (0.296) | 5.176*** (0.463) | 2.225*** (0.444) |
| Observations | 189 | 176 | 161 | 161 | 157 | 160 |
| Adjusted R ² | 0.007 | 0.017 | 0.041 | 0.062 | -0.011 | 0.036 |

*p<0.1; **p<0.05; ***p<0.01

Table 5: Regression Results Model B. The table shows regression results for (4.1), using different measures of Job Satisfaction. Namely, the individual's self described job satisfaction (PERCEPTION), Work-Life Balance (WLB), Work Stress (WS), Job Satisfaction (JS), Work-Personal Life Enhancement (WPLE), and Emotional Exhaustion (EE). All these measures can range from a scale from one to five points. Individual control variables are included in the model, although not shown in the table.

In columns (1), (2), (5), and (6), the coefficient for *Change* is not statistically significant. The regression whose results are presented in column (1) uses an individual's self perception of their work-life balance as the dependent variable. In this regression, the coefficient for *Change* is positive although statistically insignificant. In section 4.2.2, it was seen that, on average, individuals perceive the ability to WFH to deteriorate their work-life balance. So, working remotely instead of on site an extra day per week is not related to a decrease in an individual's perception of their work-life balance; although on average individuals perceive that work-life balance is lower with increased WFH capacity.

For columns (1), (2), and (5), which follow (4.1) and use individual's self described job satisfaction, Work-Life Balance, and Work-Personal Life Enhancement as a dependent variable, respectively, the coefficient for *Change* is positive. For columns (2) and (5), which follow (4.1) and Work-Life Balance, and Work-Personal Life Enhancement as a dependent variable, respectively, the coefficient for *Change* is positive. For column (6), which follows (4.1) using Emotional Exhaustion as a dependent variable, the coefficient for *Change* is negative. So, despite statistical insignificance, the signs of the coefficients for Work-Life Balance, Work-Personal Life Enhancement and Emotional Exhaustion points to higher job satisfaction for an individual

working remotely, instead of from the office, one more day per week.

4.5 Discussion

Here, previously presented results are now discussed. First, the implications of the results of the model following (4.1) are discussed. These are afterwards compared to the results in the existing literature. Then, the model's limitations are explored.

From a preliminary analysis of the data gathered, where the averages of survey responses were studied, it was concluded that increased WFH capacity by the company results in higher job satisfaction by the respondents of the survey. When exploiting the differences in exposure to WFH, by regressing models following (3.2), it was concluded that, on average, working from home instead of from the office one more day per week is related with increased job satisfaction. This increase happens through both an increase in overall Job Satisfaction, and a decrease in Work Stress.

When looking at the descriptive statistics as a preliminary analysis, it seems that survey respondents believe the ability to WFH to deteriorate their work-life balance. However, when regressing model (3.2), it was found that individuals with higher exposure to WFH don't perceive the ability to WFH to deteriorate their work-life balance. This means that higher exposure to WFH eradicates the perception that WFH decreases work-life balance. Managers should consider this when implementing WFH in their companies, by not only allowing employees to work remotely, but also incentivizing them to do so.

The literature reviewed in section 2.2 has shown that job satisfaction increases when individuals have the ability to work from home. Workers are willing to pay to have the possibility to WFH (Aksoy et al., 2022), their job satisfaction increases with more flexible models of working that include WFH (Davidescu et al., 2020), and they would consider quitting their current job if it required to work fully on-site (Barrero et al., 2021). This thesis has verified that this positive correlation between WFH and job satisfaction is extendable to the auditing industry. Therefore, hypothesis **H2** is accepted. This being, managers at auditing companies that are concerned with their employees' job satisfaction should implement models of working that allow their employees to work from home.

The results presented could, however, be limited by some factors. First, is that the assumptions, on which the results rest on, are plausible. The measures of job satisfaction used could have suffered from self-reporting bias. Particularly, from social desirability bias, recall bias, and the "halo effect". Although these biases were taken into account when constructing the survey, by implementing confidentiality and neutral question wording, concerns related to them are not completely mitigated. However, to alleviate all concerns, other strategies would be recommended for further research on the subject. These include using multiple data sources, or a survey with a longitudinal design.

Additionally, it is assumed that the sample surveyed is representative of the entire population, and that responses that are missing are not at random. These assumptions are plausible. As discussed in section 4.2.2, when analysing descriptive statistics for the data collected, the sample is representative of the population at

the company. Moreover, as the missing observations are of a small number, there should be no bias from missigness present.

It is also recognized that there are limitations in estimating a causal relationship between working from home and job satisfaction from the performed regressions. While the study provides evidence of a positive association, causality cannot be definitively inferred due to the survey design and potential confounding factors. Job satisfaction could have increased from company policies that were implemented at the same time as a hybrid model of working, such as less traveling to other company headquarters in different regions. A need for further research on this topic using different methodologies is therefore highlighted, such as longitudinal studies or experimental designs, to establish causality more robustly.

The study is performed in a Big-4 company in the Netherlands. However, some variation in the organizational culture could impact the relationship between working from home and job satisfaction, therefore altering the results. Different organizations in different countries may have unique characteristics that could influence the outcomes, which emphasizes the importance of future studies that encompass a broader range of settings.

5 Conclusion

The Covid-19 virus led to a pandemic in 2020. To fight the spread of the virus, lockdown restrictions were implemented worldwide. These restrictions included stay-at-home orders, which required companies and their employees to work from home. Succeeding the pandemic, a debate on the pros and cons of WFH arose. While some managers embraced this practice, claiming it is more cost effective and increases their employees' job satisfaction; others rejected it, claiming it decreases job performance and deteriorates work-life balance. In this thesis, light is shed on this topic, by studying two factors that managers take into account when deciding to implement WFH: work quality and job satisfaction. The study is made in the context of the auditing industry. The Covid-19 induced shock in implementation of WFH policies (through lockdown restrictions) is exploited, to examine how this affected both quality of audits performed and job satisfaction in the auditing industry.

As a first component, the effect of mandatory WFH resulting from lockdown restrictions on audit quality is studied. Audit quality is measured by the number of audits that were subject to restatements. Using data on audits performed in the U.S., from 01/01/2019 until 31/12/2022, no large overall effect of lockdowns on number of audits subject to restatements is found. Yet, a small increase in number of audits subject to restatements in the first two months of each lockdown is found. This effect dissipates immediately after. Hence, audit quality slightly decreases in the initial period of lockdown restrictions. However, shortly after, there is a return towards the previous level, and this small negative effect of lockdown restrictions on audit quality disappears.

As a second component, the relation between WFH and job satisfaction of employees working at an auditing company is analysed. Through a survey carried out at a Big-4 company in the Netherlands from 24/03/2023 until 28/04/2023, data is gathered on how the companies' increased WFH capacity can affect their employees' job satisfaction. In general, increased WFH capacity increases job satisfaction. Moreover, differences in exposure to WFH are explored, and it is found that working more days from home instead of on site is related with both an increase of job satisfaction and decrease of work stress of employees. It is also found that there is a general perception that the ability to WFH decreases an individual's work-life balance. However, increased exposure to WFH eradicates this perception.

The results found in this thesis contribute to the debate on the pros and cons of implementing working from home in audit companies, by adding to the literature on the effect of WFH in the auditing industry. The found decrease in audit quality in the first two months of mandatory remote working due to lockdown restrictions might leave managers at audit companies reluctant to implement working from home. However, the return to pre-lockdown levels of audit quality after two months of lockdown restrictions that was found mitigates these concerns. Moreover, the discovered positive relation between job satisfaction and WFH in an audit company might make managers in this industry willing to implement working from home, specially considering the positive relation between job satisfaction and job performance described in existing literature (Barrero et al. (2021), Hassan et al. (2020), Bin and Shmailan (2015)). Managers at audit companies solely

concerned with the quality of audits performed should be careful in implementing working from home, to avoid the small decrease in audit quality in the first two months of implementation of WFH. However, these should also consider the positive relation between job satisfaction and both job performance and working from home. Generally, managers at audit companies should weight the possible short-term decrease in audit quality with the possible long-term increase in job satisfaction, and in turn job performance, when deciding to implement working from home in their companies.

The presented results may be subject to the following limitations. On one side, the models studying how WFH affects audit quality rely on lockdowns affecting audit quality only through WFH, on restatements efficiently measuring audit quality, and on lockdowns being a coherent proxy for WFH. That is, by studying the effect of WFH on audit quality through lockdown restrictions, there might be an overestimation of the effect of working from home on audit quality. Therefore, it should be taken into account that the slight effect found might be an overestimation of the real effect. On another side, the models studying how WFH affects job satisfaction could be limited by different bias in the survey (self-reporting bias, social desirability bias, recall bias, and the "halo effect"), and by the organizational structure of the company where the survey was performed. Moreover, no causal relationship of WFH on job satisfaction can be estimated.

Recognizing the limitations of the thesis, further research on this topic is recommended. When studying the effect of WFH on quality of audits performed, issues in the variables used to measure both audit quality and working from home are acknowledged. Therefore, it is recommend for researchers to regress similar models with a more broad spectrum of different measures of audit quality, as well as a more concrete measure of WFH. Particularly, literature would benefit from studies that look at how hybrid models of working (that include working from home and on site) affect audit quality. In this thesis, some evidence that there might be a learning curve in implementing WFH policies is found. Studies on this possible learning curve that is created once companies first implement models of working that include remote working would add to the literature. Additionally, similar studies on other industries and countries would be valuable. Considering the limitations of our analysis on the effect of WFH on job satisfaction, further research on this topic is also needed. Performing similar studies with a broader range of individuals, on different organizational structures and different countries, would be valuable. Moreover, employing different methods such as difference-in-differences regressions, or data not subject to self-reporting related bias in surveys, would be beneficial in estimating the causal effect of WFH on job satisfaction.

On average, lockdown restrictions don't have a significant effect on audit quality. However, there is a slight decrease in audit quality in the first two months of stay-at-home orders, which dissipates after these two months. Moreover, working from home is related with an increase in job satisfaction of employees at an auditing company. When managers at audit companies decide whether to adopt WFH, these two effects should be considered to make an informed decision.

References

- Aksoy, C., Barrero, J., Bloom, N., Davis, S., Dolls, M., & Zarate, P. (2022). Working from home around the world.
- Albitar, K., Gerged, A., Kikhia, H., Hussainey, K., & Aziri, B. (2020). Auditing in times of social distancing: the effect of covid-19 on auditing quality. *International Journal of Accounting Information Management*, 29(1), 169–178.
- Appelbaum, D., Budnik, S., & Vasarhelyi, M. (2020). Auditing and accounting during and after the covid-19 crisis. *The CPA Journal*, 90(6), 14–19.
- Aziri, B. (2011). Job satisfaction: A literature review. *Management research practice*, 3(4).
- Bailey, M. J., & Goodman-Bacon, A. (2015). The war on poverty’s experiment in public medicine: Community health centers and the mortality of older americans. *American Economic Review*, 105(3), 1067–1104.
- Barrero, J., Bloom, N., & Davis, S. (2021). Let me work from home, or i will find another job.
- Beck, T., Levine, R., & Levkov, A. (2010). Big bad banks? the winners and losers from bank deregulation in the united states. *The Journal of Finance*, 65(5), 1637–1667.
- Bin, A., & Shmailan, A. (2015). The relationship between job satisfaction, job performance and employee engagement: An explorative study. *Issues in Business Management and Economics*, 4(1), 1–8.
- Bloom, N., Liang, J., Roberts, J., & Ying, Z. (2015). Does working from home work? evidence from a chinese experiment. *The Quarterly Journal of Economics*, 130(1), 165–218.
- Davidescu, A., Apostu, S., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among romanian employees—implications for sustainable human resource management. *Sustainability*, 12(15), 6086.
- Eulerich, M., Wagener, M., & Wood, D. (2022). Evidence on internal audit quality from transitioning to remote audits because of covid-19. *Journal of Information Systems*.
- Fortune. (2022a). *Anti-wfh goldman sachs has nearly all workers back in office, but ceo insists he 'doesn't want rules'*. Retrieved from <https://fortune.com/2022/10/19/goldman-sachs-ceo-david-solomon-brought-office-working> (Accessed on February 20, 2023)
- Fortune. (2022b). *Yelp's ceo thinks hybrid work is 'hell'*. Retrieved from <https://fortune.com/2022/06/23/yelp-ceo-jeremy-stoppelman-slams-hybrid-work-closes> (Accessed on February 20, 2023)
- Franklin, J. (2022). *Elon musk tells employees to return to the office 40 hours a week - or quit*. Npr.
- Gallie, D., Felstead, A., Green, F., & Inanc, H. (2014). The quality of work in britain over the economic crisis. *International Review of Sociology*, 24(2), 207–224.
- George, E., Louw, D., & Badenhorst, G. (2008). Job satisfaction among urban secondary-school teachers in namibia. *South African Journal of Education*, 28(2), 135–154.
- 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 Microeco-*

nomics, 1(1), 7–41.

- Gong, S., Ho, N., Jin, J., & Kanagaretnam, K. (2022a). Audit quality and covid-19 restrictions. *Managerial Auditing Journal*, – –.
- Gong, S., Ho, N., Jin, J. Y., & Kanagaretnam, K. (2022b). Audit quality and covid-19 restrictions. *Managerial Auditing Journal*(ahead-of-print).
- Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., . . . others (2021). A global panel database of pandemic policies (oxford covid-19 government response tracker). *Nature human behaviour*, 5(4), 529–538.
- Halkos, G., & Bousinakis, D. (2010). The effect of stress and satisfaction on productivity. *International Journal of Productivity and Performance Management*, 59(5), 415–431.
- Hassan, M., Azmat, U., Sarwar, S., Adil, I., & Gillani, S. (2020). Impact of job satisfaction, job stress and motivation on job performance: a case from private universities of karachi. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 9(2), 31–41.
- Jin, Y., Tian, G., Wu, D., & Xin, X. (2022). Remote auditing and audit quality: Evidence from the field. (Available at SSRN. 14)
- Kowalski, K. B., Aruldoss, A., Gurumurthy, B., & Parayitam, S. (2022). Work-from-home productivity and job satisfaction: a double-layered moderated mediation model. *Sustainability*, 14(18), 11179.
- IMF. (2020). *WEO: The Great Lockdown - Worst Economic Downturn Since the Great Depression*. <https://www.imf.org/en/Blogs/Articles/2020/04/14/blog-weo-the-great-lockdown-worst-economic-downturn-since-the-great-depression>. (Accessed on June 12, 2023)
- India Today. (2020). *Apple ceo tim cook impressed with employees' ability to work from home, says some things work well virtually*. Retrieved from <https://www.indiatoday.in/technology/news/story/apple-ceo-tim-cook-impressed-with-employees-ability-to-work-from-home-says-some-things-work-well-virtually-1724222-2020-09-22> (Accessed on June 20, 2023)
- Johns Hopkins Medicine. (2021). *First and second waves of coronavirus*. Retrieved from <https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/first-and-second-waves-of-coronavirus> (Accessed on June 20, 2023)
- KPMG UK. (2023). *Your curiosity could help strengthen the economy*. Retrieved from <https://www.kpmgcareers.co.uk/graduate/audit/#:~:text=Put%20simply%2C%20audit%20is> (Accessed on April 13, 2023)
- National Conference of State Legislatures. (2023). *Basic information about which states have major tax types*. Retrieved from <https://www.ncsl.org/research/fiscal-policy/basic-information-about-which-states-have-major-tax-types> (Accessed on May 1, 2023)
- Pew Research Center. (2022). *COVID-19 Pandemic Continues to Reshape Work in America*. <https://www.pewresearch.org/social-trends/2022/02/16/covid-19-pandemic-continues-to-reshape-work-in-america/>. (Accessed on June 12, 2023)

- PWC Netherlands. (2020). The costs and benefits of working from home. Retrieved from <https://www.pwc.nl/nl/actueel-publicaties/assets/pdfs/pwc-the-costs-and-benefits-of-working-from-home.pdf>
- United States Census Bureau. (2022). *Census*.
- Rajgopal, S., Srinivasan, S., & Zheng, X. (2021). Measuring audit quality. *Review of Accounting Studies*, 26(2), 559-619.
- Saputro, K., & Mappanyukki, R. (2022). The effect of skepticism, time pressure, and remote audit during the covid-19 pandemic on audit quality: A study of auditors' perception. *Jurnal Tata Kelola Dan Akuntabilitas Keuangan Negara*, 8(1), 81-98.
- Suhendri, H., Handayanto, A., & Kelana, T. (2022). The effect of independence and remote audit on audit quality during the covid-19 pandemic. *MEC-J (Management and Economics Journal)*, 6(3), 271-280. (WFH policies and job satisfaction)
- Susilo, D. (2020). Revealing the effect of work-from-home on job performance during the covid-19 crisis: Empirical evidence from indonesia. *Journal of Contemporary Issues in Business and Government*, 26(1), 23-40.
- Warren, K. S., Postolache, T. T., Groer, M. E., Pinjari, O. A., Kelly, D. L., Reynolds, M. A., & Meltzer-Brody, S. E. (2001, 6). Role of chronic stress and depression in periodontal diseases. *Periodontology 2000*, 23(1), 154-163. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/11393302/> doi: 10.1034/j.1600-0757.2000.2230113.x
- Zipperer, B., Cengiz, D., Dube, A., & Lindner, A. (2019). The effect of minimum wages on low-wage jobs. *The Quarterly Journal of Economics*, 1405, 1454.

A Appendix

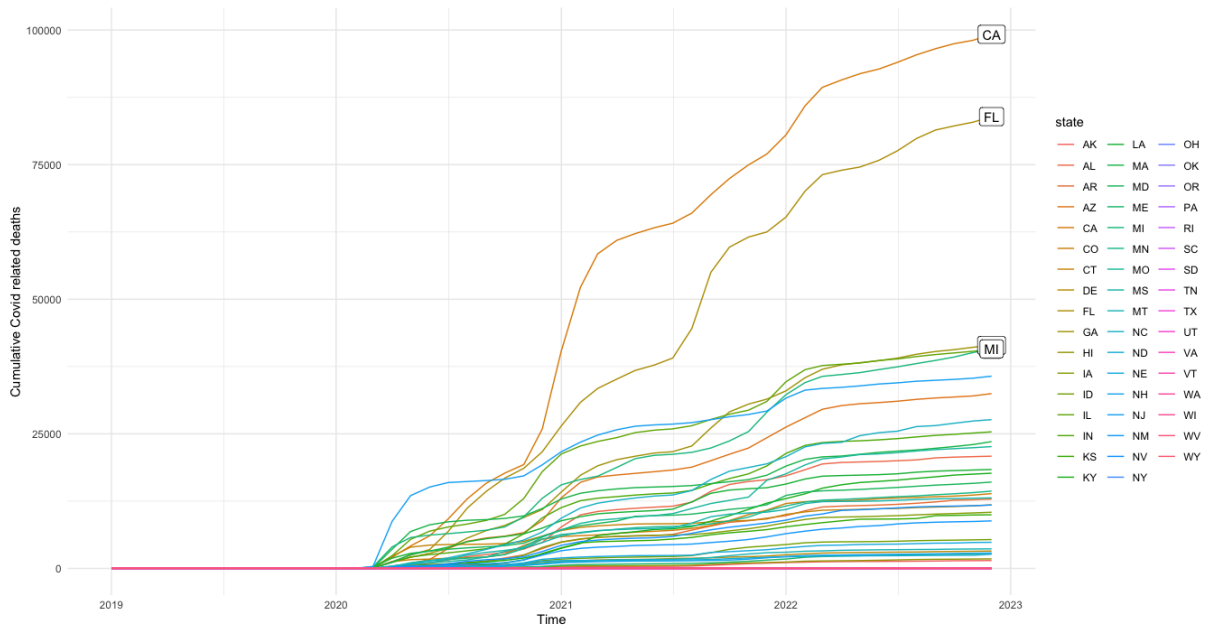


Figure 7: Cumulative Covid Related Deaths by State over Time. The figure shows how the number of Covid related deaths per month evolve over by state, over time. There is a general upward trend. California is the state with the highest number of Covid related deaths, followed by Texas, New York, Florida, and Pennsylvania.

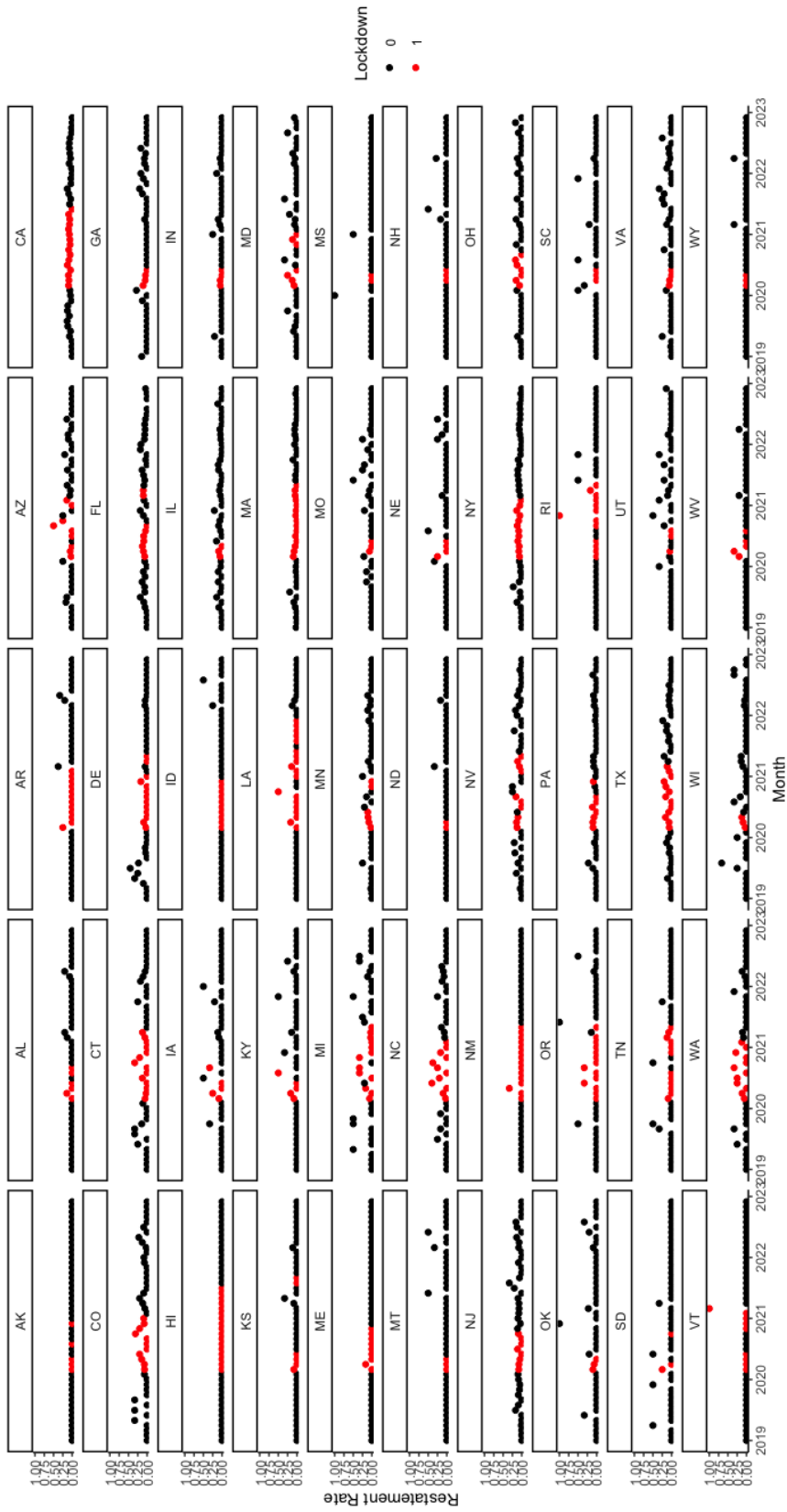


Figure 8: Restatement Ratio by Lockdown Status. The figure shows how the restatement ratio varies given different lockdown status, for all U.S. states. Black dots represent the number of audits subject to restatements when lockdown was not in place, and red dots represent the number of audits subject to restatements when lockdown was in place.

B Appendix

WLB

I have more adequate time to spend with the family due to increased WFH capacity.
I am missing less important social occasions due to increased WFH capacity.
I can better maintain my work and family with a proper schedule due to increased WFH capacity.
I have more time to take medical health checkups due to increased WFH capacity.
My personal life suffers less because of work due to increased WFH capacity.
I do neglect less personal needs because of work due to increased WFH capacity.

Work Stress

I am more often discouraged about my work due to increased WFH capacity.
I feel more often that things are beyond my control and ability in my job due to increased WFH capacity.
I feel more often overwhelmed by my work due to increased WFH capacity.
I feel more often like giving up on work due to increased WFH capacity.
I feel more often unable to get out from my work due to increased WFH capacity.
I feel more often frustrated with my job due to increased WFH capacity.
Peak seasons are more stressful due to increased WFH capacity.

Job Satisfaction

I am more satisfied with my current co-workers due to increased WFH capacity.
I am more satisfied and feel happy with KPMG due to increased WFH capacity.
I am more satisfied with my current salary due to increased WFH capacity.
Overall, I am more satisfied with my current job due to increased WFH capacity.

WPLE

Personal life gives me more energy for my job due to increased WFH capacity.
My job gives me more energy to pursue personal activities due to increased WFH capacity.
I have more often a better mood at work because of personal life due to increased WFH capacity.
I have more often a better mood because of my job due to increased WFH capacity.

Emotional Exhaustion

I feel more often emotionally drained from my work due to increased WFH capacity.
I feel more often used up at the end of the workday due to increased WFH capacity.
I feel more often fatigued when getting up in the morning and having to face another day on the job due to increased WFH capacity.
I feel more often burned out from my work due to increased WFH capacity.

Table 6: Measures and their constructs. The table shows the different measures of job satisfaction (WLB, Work Stress, Job Satisfaction, WPLE, and Emotional Exhaustion) and their respective constructs. These were the measures adopted in the prepared survey.

| Variable | N | Mean | Median | St. Dev. | Min | Max |
|-------------------|-----|-------|--------|----------|-----|-----|
| BeforePandemicWFH | 198 | 0.626 | 0 | 1.356 | 0 | 5 |
| AfterPandemicWFH | 198 | 2.056 | 2 | 1.214 | 0 | 5 |
| Change | 198 | 1.429 | 2 | 1.575 | -4 | 4 |

Table 7: Summary Statistics for Change in number of days per week WFH The table displays summary statistics for the variables *BeforePandemicWFH*, *AfterPandemicWFH*, and *change*, which evaluate, respectively, the average number of days an individual was working from home before the pandemic, the average number of days an individual is working from home after the pandemic, and the change in number of days working from home from before until after the pandemic. The number of observations, mean, median, standard deviation, minimum, and maximum is showed.

| | |
|----------------------|-----|
| Age | N |
| <20 | 2 |
| 21-30 | 128 |
| 31-40 | 61 |
| 41-50 | 4 |
| 50+ | 4 |
| Gender | N |
| Male | 120 |
| Female | 77 |
| Non-Binary | 1 |
| Third gender | 1 |
| Department | N |
| Auditing | 119 |
| Consulting | 44 |
| Other | 36 |
| Yearly Salary | N |
| <30.000 | 4 |
| 30.001-50.000 | 68 |
| 50.001-75.000 | 87 |
| 75.001-100.000 | 23 |
| >100.001 | 12 |
| Lives with | N |
| Alone | 119 |
| Their partner | 44 |
| Children | 36 |
| Roommates | 36 |
| Their parents | 36 |
| Other family members | 36 |

Table 8: Descriptive Statistics for Individual Characteristics. The tables show Descriptive Statistics for different individual characteristics of the surveyed population sample. The number of people in each segment of age, gender, yearly salary, department in the company where the individual works, and whom the individual lives with is displayed.

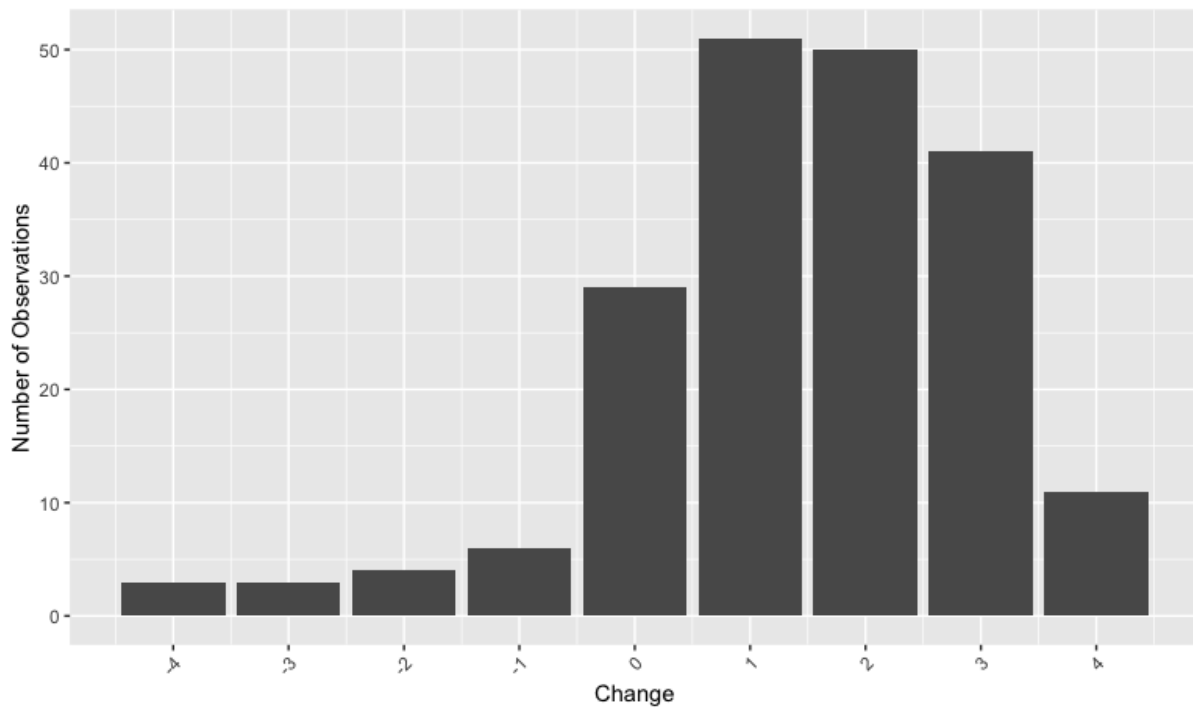


Figure 9: Histogram of *Change*. The histogram depicts different levels on the change in number of days working from home before and after 2020. Most respondents have increased their number of days working from home by one, two, or three extra days. There were some respondents whom didn't increase nor decrease their number of days WFH. A few respondents have decreased their working from home intensity after 2020, compared to before.

Working From Home (WFH) and Job Satisfaction in the auditing industry

Block: introduction

Welcome to this survey on Working From Home and Job Satisfaction.

Many companies, including KPMG, are currently experimenting with flexible Working From Home (WFH) policies. This survey aims to study how these new policies impact job satisfaction and work-life balance.

The questionnaire consists of 10 simple questions, followed by 6 topics in which we ask to what extent you agree with different sentences, and ends with an evaluation of your willingness to pay to work from home. It should take no longer than 5 minutes to complete.

Your responses will remain anonymous, and the data collected will only be used for the purposes of this research. You may stop answering at any point. By clicking "Next page", you provide your consent to use the collected data for research.

Block: Individual control questions

How old are you?

- <20 (1)
- 20-30 (2)
- 30-40 (3)
- 40-50 (4)
- 50+ (5)

Page 1 of 13

What is your gender?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer not to say (4)

Who do you live with (choose as many as apply)?

- Alone (1)
- With roommates (2)
- With my parents (3)
- With my partner (4)
- With my children (5)
- With other family member(s) (6)

Page 2 of 13

What department at KPMG do you work at?

- Audit (1)
- Tax (2)
- Deal Advisory (3)
- Consulting (4)
- Sustainable Futures (5)
- Private Enterprise (6)
- Platform X (7)
- Other (8)

What is your position at KPMG?

- Intern (1)
- Auditor / Consultant / Executive (2)
- Supervisor / Senior Consultant / Associate (3)
- Manager (4)
- Senior Manager (5)
- Director (6)
- Partner (7)

Page 3 of 13

What is your current yearly salary?

- < 30.000 (1)
- 30.001-50.000 (2)
- 50.001-75.000 (3)
- 75.001-100.000 (4)
- >100.001 (5)

Were you working at KPMG before 2020?

(Please note that as the target group must have worked at KPMG before 2020, if the answer is no, you will be directed to the end of the survey)

- Yes (1)
- No (2)

Page 4 of 13

Block: WFH intensity and perceptions

How many days per week did you work from home before the pandemic, on average?

- 0 (6)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

How many days per week do you work from home now, on average?

- 0 (6)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Do you feel that the ability to WFH deteriorates your work-life balance?

- Definitely yes (1)
- Probably yes (2)
- Might or might not (3)
- Probably not (4)
- Definitely not (5)

Block: Work From Home Productivity

The Covid-19 pandemic has had a lasting effect in how we work. Many companies, including KPMG, have increased working from home (WFH) capacity after the pandemic.

Taking this into account, please respond to what extent you agree with the following sentences:

| | Strongly disagree (1) | Somewhat disagree (2) | Neither agree nor disagree (3) | Somewhat agree (4) | Strongly agree (5) |
|--|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| I am more productive due to increased WFH capacity. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel that the quality of work I carry out is better due to increased WFH capacity. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Communication with the client is easier due to increased WFH capacity. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Communication with my team is easier due to increased WFH capacity. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Block: Work-Life Balance

The Covid-19 pandemic has had a lasting effect in how we work. Many companies, including KPMG, have increased working from home (WFH) capacity after the pandemic.

Taking this into account, please respond to what extent you agree with the following sentences:

| | Strongly disagree (1) | Somewhat disagree (2) | Neither agree nor disagree (3) | Somewhat agree (4) | Strongly agree (5) |
|--|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| I have more adequate time to spend with the family due to increased WFH capacity. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am missing less important social occasions due to increased WFH capacity. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can better maintain my work and family with a proper schedule due to increased WFH capacity. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have more time to take medical health checkups due to increased WFH capacity. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| My personal life suffers less because of work due to increased WFH capacity. (10) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I do neglect less personal needs because of work due to increased WFH capacity. (11) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Block: Work Stress

The Covid-19 pandemic has had a lasting effect in how we work. Many companies, including KPMG, have increased working from home (WFH) capacity after the pandemic.

Taking this into account, please respond to what extent you agree with the following sentences:

| | Strongly disagree (1) | Somewhat disagree (2) | Neither agree nor disagree (3) | Somewhat agree (4) | Strongly agree (5) |
|--|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| I am more often discouraged about my work due to increased WFH capacity. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often that things are beyond my control and ability in my job due to increased WFH capacity. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often overwhelmed by my work due to increased WFH capacity. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often like giving up on work due to increased WFH capacity. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often unable to get out from my work due to increased WFH capacity. (10) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often frustrated with my job due to increased WFH capacity. (11) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Peak seasons are more stressful due to increased WFH capacity. (12) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Block: Job Satisfaction

The Covid-19 pandemic has had a lasting effect in how we work. Many companies, including KPMG, have increased working from home (WFH) capacity after the pandemic.

Taking this into account, please respond to what extent you agree with the following sentences:

| | Strongly disagree (1) | Somewhat disagree (2) | Neither agree nor disagree (3) | Somewhat agree (4) | Strongly agree (5) |
|---|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| I am more satisfied with my current co-workers due to increased WFH capacity. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am more satisfied and feel happy with KPMG due to increased WFH capacity. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am more satisfied with my current salary due to increased WFH capacity. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Overall, I am more satisfied with my current job due to increased WFH capacity. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Block: Work Personal Life Enhancement

The Covid-19 pandemic has had a lasting effect in how we work. Many companies, including KPMG, have increased working from home (WFH) capacity after the pandemic.

Taking this into account, please respond to what extent you agree with the following sentences:

| | Strongly disagree (1) | Somewhat disagree (2) | Neither agree nor disagree (3) | Somewhat agree (4) | Strongly agree (5) |
|---|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| Personal life gives me more energy for my job due to increased WFH capacity. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| My job gives me more energy to pursue personal activities due to increased WFH capacity. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have more often a better mood at work because of personal life due to increased WFH capacity. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have more often a better mood because of my job due to increased WFH capacity. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Block: Emotional exhaustion

The Covid-19 pandemic has had a lasting effect in how we work. Many companies, including KPMG, have increased working from home (WFH) capacity after the pandemic.



Taking this into account, please respond to what extent you agree with the following sentences:

| | Strongly disagree (1) | Somewhat disagree (2) | Neither agree nor disagree (3) | Somewhat agree (4) | Strongly agree (5) |
|--|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| I feel more often emotionally drained from my work due to increased WFH capacity. (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often used up at the end of the workday due to increased WFH capacity. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often fatigued when getting up in the morning and having to face another day on the job due to increased WFH capacity. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more often burned out from my work due to increased WFH capacity. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please consider now that you would have the same job as you have now, receiving the same salary. You will be presented with different scenarios, where you are allowed different days working from home (WFH) by KPMG.

What percentage of your salary would you be willing to give up, to allow for one extra day per week working from home?

0 10 20 30 40 50 60 70 80 90 100

