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A Comprehensive Review of the 4-Day Work Week

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ABSTRACT

Questa tesi esplora il crescente interesse per la settimana lavorativa di quattro giorni come alternativa al tradizionale modello di cinque giorni, esaminando le sue radici storiche, le attuali implementazioni e le potenziali implicazioni future per i lavoratori e le aziende. Lo studio inizia con un'analisi storica, tracciando l'evoluzione della settimana lavorativa dall'istituzione del modello a cinque giorni durante la rivoluzione industriale fino alla domanda attuale di orari di lavoro più flessibili e bilanciati. Questo contesto storico prepara il terreno per un'indagine più approfondita sui fattori che influenzano il tempo speso a lavoro nel campo dell'Economia del Personale, così come sul ruolo dell'Unione Europea nel monitorare e plasmare le politiche del lavoro che rispondono a queste tendenze emergenti.

L’elaborato fornisce quindi un'analisi dettagliata di vari modelli di settimana lavorativa di quattro giorni attualmente in fase di sperimentazione, inclusi progetti pilota individuali, tra più aziende e nel settore pubblico, con particolare attenzione alla solidità e all'attrattiva delle sperimentazioni tra più aziende. Il grande esperimento della settimana lavorativa di quattro giorni nel Regno Unito è presentato come un caso studio completo, offrendo spunti sulle pratiche di attuazione di un tale cambiamento e valutando il suo impatto sulla produttività, il

benessere dei dipendenti e i risultati aziendali. Lo studio esamina anche le prove e le discussioni in corso in Italia, evidenziando come i fattori economici, giuridici e culturali locali influenzino l'adozione e l'accettazione di settimane lavorative più brevi.

Infine, la tesi affronta le critiche al concetto di settimana lavorativa di quattro giorni e identifica potenziali aree di miglioramento nella sua attuazione. Invece di sostenere la settimana lavorativa di quattro giorni come il futuro definitivo del lavoro, questa ricerca si propone di fornire un'analisi equilibrata e approfondita dell'argomento, considerando le prospettive di tutti i soggetti interessati, la letteratura accademica esistente, le prove in corso e i quadri istituzionali.

INTRODUCTION

The structure of the workweek is a foundation of modern life, deeply interlaced with economic systems, social norms, and individual well-being. For much of the past century, the five-day workweek has been the standard in many countries, a norm that was shaped by the industrial era's demands and the labor rights movements that fought for a more balanced division between work and personal

time. However, as society continues to evolve, so too do our perspectives on what constitutes a healthy and productive work-life balance. In recent years, the idea of a four-day workweek has gained considerable attention, presenting an attractive alternative to the traditional five-day model. This thesis delves into the growing interest toward shorter workweeks, exploring its origins, its implementation in various contexts, and possible implications for the future of workers and companies.

The journey begins with an exploration of the historical development from the five-day workweek to the current interest in more flexible and shorter work schedules. This historical perspective provides a foundation for understanding how societal changes, technological advancements, and shifting cultural values have influenced our approach to structure work time. From the industrial revolution, which established the five-day workweek as a standard, to the present day, where technological efficiency and concerns over burnout have prompted calls for change, this section traces the evolution of the workweek and the factors driving new trends.

Following this historical overview, the thesis examines the concept of working time in the field of Personnel Economics, trying to understand which are the factors that affect the desire and the need for spending the right amount of time working. After that there is space to study the institutional framework within the European Union that governs labor policies and how it is responding to these

emerging trends. The EU's role in shaping and regulating labor practices across its member states is crucial for monitoring the changes, the productivity, the preferences and the main differences across all member states.

A detailed analysis of the different types of 4 Day-work weeks currently being explored follows. This section outlines the various models of reduced workweeks, from individual pilots to multi-company pilots and public sector ones, each one with an adequate case study. By comparing these different examples, the thesis aims to provide that in the present context, the most appealing type of pilots, due to their robustness are the multi-companies ones.

The UK’s experience with the largest trial of a four-day workweek is then presented as a full case study (after presenting also the promoting organization), offering valuable insights into the practicalities of implementing such a significant change in a real-world context. This trial, which involved a diverse range of businesses and industries, provides a wealth of data on the impacts of a four-day workweek on productivity, employee well-being, and business outcomes. The results of this trial are critically analyzed to assess the feasibility of broader adoption and to identify key lessons that can be applied in other contexts.

The thesis also turns its attention to the situation in Italy, where both ongoing trials and discussions about the four-day workweek reflect the country’s unique economic and cultural landscape. Italy’s approach to workweek reform is examined carefully, considering how local factors such as labor laws, economic

conditions, and cultural attitudes toward work influence the implementation and reception of a shorter workweek. This chapter provides various examples of how some companies, conducting different businesses, with different sizes and characteristics, are moving in this way. Some of them have already interesting results, others are still in first phase of experimentation.

Finally, the paper addresses the criticisms and potential areas for improvement in the concept of the four-day workweek's pilots. While there is growing enthusiasm for the idea, it is not without its detractors. This section explores these criticisms in depth and considers ways in which the actual pilots can be refined and adapted to address these challenges.

The aim of this work is not to state that this type of work organization will represent the only type of possible future, but instead to review the topic in the most comprehensive way considering all the possible agents involved, reading the actual academic research, reports available for present trials, institutional frameworks and market trends.

1- Historical path: the evolution of the working week

1.1 From the first organization of Labor to the Post-war

Over history, the conventional working week has changed significantly under influence of technological, cultural, and economic developments. With no set concept of a working week, work in early agrarian communities was essentially determined by the cycles of nature. Labor was arranged according to planting and harvesting seasons, and daylight set daily labor hours. For millennia, this adaptable attitude to labor continued; religious and cultural customs occasionally shaped rest days, such the Sabbath in Judeo-Christian traditions.

The working week's organization underwent a significant change when the Industrial Revolution started in the late 18th and early 19th centuries. Mass production and industries' growth demanded a disciplined and steady workforce, which resulted in the creation of more set working hours. Children among other industrial workers suffered terrible working conditions, sometimes spending six days a week, twelve to sixteen hours a day. Reflecting the pressures of a fast-expanding industrial economy, this demanding schedule was a clear shift from the more flexible labor patterns of pre-industrial society.

The hard reality of industrial labor spurred major social and political movements supporting workers' rights as the 19th century developed. Striking and protesting, the early labor movement was vital in questioning the status quo. Welsh labor movement Robert Owen's 1817 demand for an eight-hour workweek was among the first known ones; he suggested the phrase "Eight hours labor, eight hours recreation, eight hours rest." The Haymarket event of Chicago in 1886, which highlighted the growing demand for an eight-hour workweek, was among the turning points in this fight. Captured by the motto invented by Owen "eight hours for work, eight hours for rest, and eight hours for what we will," this era saw growing calls for improved working conditions and fair hours.

Comprising eight-hour workdays spread over five days, the conventional 40-hour workweek marks a major turning point in labor history attained by means of worker activity, legislative changes, and industrial development. This framework captures legislative successes, the pinnacle of decades of worker's rights movement, and evolving economic policies.

The eight-hour workday originated in the early 19th century during the Industrial Revolution, when workers sometimes put in 12 to 16 hours a day, six days a week under difficult conditions. The terrible working conditions resulted in labor movements supporting less hours developing.

With late 19th-century labor movements, the campaign for the eight-hour workday acquired great momentum in the United States. An important event

turned out to be the Haymarket affair in Chicago on May 4, 1886. Originally a nonviolent gathering supporting workers striking for an eight-hour workday, it became violent when a bomb was hurled at police, killing both cops and citizens. This action underlined the great effort and the demand of the larger labor movement for set working hours.

Inspired by the expanding power of labor unions and progressive political movements, the campaign for reduced working hours made great advancement in early 20th century.

Labor rights advanced even more in the early of that century; a major turning point came with the five-day workweek. This change was greatly facilitated by Henry Ford, the man behind Ford Motor Company. Driven by the idea that smaller workweeks would boost output and drive consumer spending, Ford instituted a five-day, forty-hour workweek for his staff in 1926.

Ford's program had a significant influence on other sectors and established labor standards' benchmark. The 1930s Great Depression intensified the drive for shorter workweeks as a way of unemployment control. In the United States, the Fair Labor Standards Act of 1938 established the 40-hour workweek and instituted overtime pay for hours above this level. Other developed countries underwent similar labor reforms, so weaving the five-day workweek into the socioeconomic fabric of the 20th century.

After World War II, society's perceptions of work and leisure underwent notable change. Changing social conventions, technical developments, and economic success all helped to emphasize work-life balance more broadly. The idea of "leisure society," in which higher automation and efficiency were projected to lower working hours, therefore allowing more time for leisure and personal interests, first surfaced in the 1950s and 1960s.

1.2 Start of academic interest for the 4-day work week

“The 4-day workweek has caught the imagination of the public. It has intrigued management and is winning guarded support from labor organizations. But the big question is unanswered: Is a breakthrough from a 5-day to a 4-day week imminent?” (Hedges, 1971).

Considering the worldwide exposure the concept of a four-day work week (4DWW) has been attracting in recent years, one would be forgiven for thinking the above quote was contemporary. However, it is over 50 years old and the origins of the 4DWW idea go back further.

For example, in the U.S. Walter Reuther bargained for a four-day, 32 h week in the 1950’s (Hartman and Weaver 1977) and U.S. drivers of fuel oil and gasoline delivery trucks were working 4DWW’s in the 1940’s (Dunham and Hawk 1977).

In this context, discussions about shorter workweeks gained prominence.

The earliest 4DWW scientific article (Tesha Jahal, E Anne Bardoel, John Hopkins 2023) was dated back to 1971, and the 1970s was found to be the decade when research into the 4DWW was most popular amongst researchers, accounting for 61% of all research in this sample. By decade, 20 articles were published in the 1970s, 1 in the 1990s, 2 in the 2000s, and 5 in the 2010s.

After a good amount of 4DWW research in the 1970s, mostly in the U.S. (Ronen and Primps 1981), the idea started to lose steam and university studies stopped (Hung 1996). Flextime and other flexible work arrangements became more popular in both study and real life. A lot of the 4DWW study that did go on was CWW's. (Compressed Work Week).

Most people worked a 10-hour, four-day week in the 1980s and 1990s, just like they did in the 1970s.

To gain an indication of when the popular interest in the 4DWW began to re-emerge, a ProQuest Central search was conducted in March 2023 of ‘Newspaper articles’ containing the terms “Four day work week” from ‘Anywhere’ in the article.

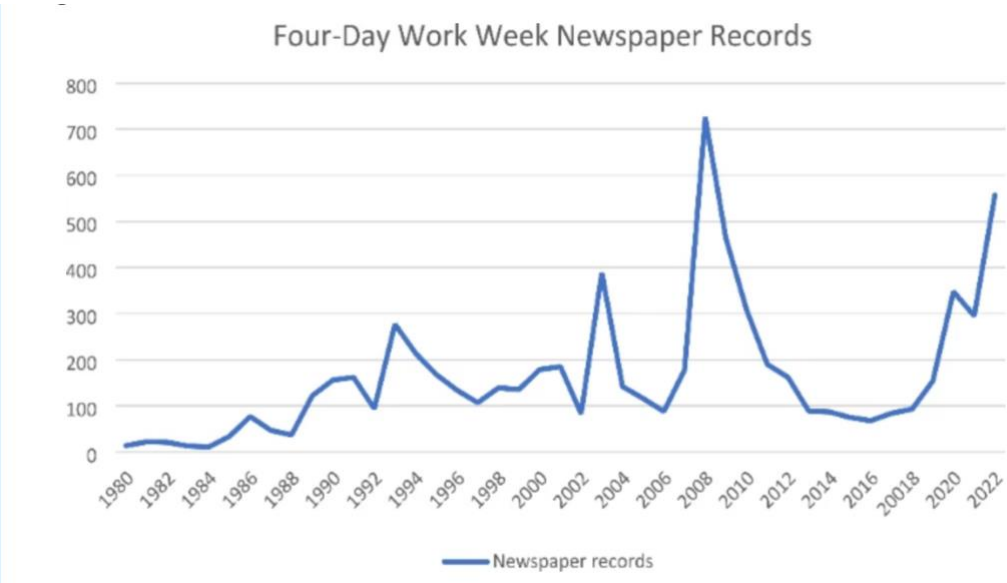


Figure 1, Number of Newspaper Records through the years, Source: ProQuest Central 2023

There was a noticeable spike in popular interest between about 2008–2012 (the first contemporary wave) and another more recent spike from about 2019 (a second contemporary wave).

The first wave was caused by the effects of the global financial crisis and a rise in the price of fuel. There was a policy window when a shorter workweek was seen as a good choice, according to West, Condrey, and Rush (2010, p. 68). This was because of the sudden rise in gas prices. Bird (2010) said that the 1970s were the most popular years for 4DWWs because of the oil crisis and the huge price rise that followed. It looks like transportation and running costs have been a big reason

for the 4DWW. But when gas costs leveled off and the effects of the global financial crisis were felt in the economy, the idea stopped moving again. In these hard economic times, any move to a 4DWW was likely to be seen as an unnecessary "perk."

People are interested in the 4DWW again since about 2019, but there were not many academic papers on the subject. This interest is not coming from academics like it did in the past. Instead, it is coming from the media, political commentators, trade unions, political parties, advocacy groups, think tanks, and some businesses that say it will help the environment, the community, the economy, families, and individuals in different ways (Delaney, 2021 p.176-190).

The calls for a 4DWW have been sparked by two studies in particular: the Icelandic study that took place from 2015 to 2019 and the Perpetual Guardian study in New Zealand.

Not surprisingly, a renaissance in post-pandemic interest in this topic was also observed, with five new articles being published in 2022, the highest number of published articles in a single year since 1975.

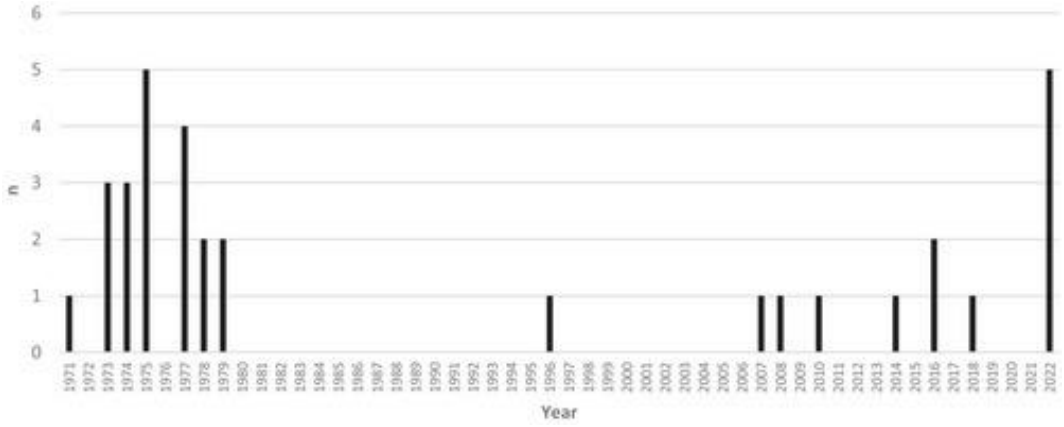


Figure 2, Frequency of 4DWW articles (1971–2022) Source: Tesha Jahal, E Anne Bardoel, John Hopkins (2023)

In line with Arksey and O'Malley's (2005) framework, which requires authors to identify a research gap after examining the relevant literature, this new evidence clearly illustrates a lack of peer-reviewed research between the late 1970s and 2022. The fact that so many companies are now trialing the 4DWW, in response to increased demand for FWAs and rising burnout amongst employees, highlights the demand and need for more contemporary research into this topic.

1.3 Main themes discussed

The research made by them into those publications reveled that the main themes discussed are 5:

- Employee acceptance: can be thought of in terms of employee consultation or individual employee choice. Here we consider whether employees formally or informally accept the 4DWW (Iverson 1996) based on eight relevant studies from 1974 to 2018 – one study found employees who favored maintaining a mandated 4DWW achieved a higher level of work-family balance, which the authors interpret as signaling employee acceptance (Wadsworth and Facer 2016, p.382-404); another study found acceptance in terms of an employee vote (Fottler 1977), two studies discovered a mixture of acceptance and rejection (Hyatt and Coslor 2018; Kenny 1974), and another study found a strategy that would likely facilitate acceptance by emphasising employee choice (Henderson 2014). In addition, three studies that also identify individual employee choice are discussed under 'gender and career advancement' below.
- Allocation of time: The notion of the 4DWW is one that rests on the benefits derived by employees through their perceptions and allocation of time, as discussed in three studies. In his study of male blue-collar workers, Maklan (1977) compared workers on a 4-day and 5-day schedule. The 3-day weekend was particularly attractive for workers on 4DWW, as it facilitated the enjoyment of outdoor activities that typically demand a larger block of time, for example, 'hunting, fishing, hiking, cycling, bicycle riding, and taking walks' (Maklan 1977, 24).

Employees working a 4DWW did not participate in ‘novel endeavours’ in their discretionary time (Maklan 1977, 25). Instead, 4-day workers took a more active role in their family life (Maklan 1977). However, the findings showed that males on a 4DWW schedule did not assist their partners with the daily housework that has traditionally been carried out by women, such as preparing meals or doing the laundry (Maklan 1977). It is worth noting that father time on childcare in the United States expanded significantly from 1965 to 1998 (Bianchi 2000), so these gendered findings from the 1970s might be different today.

Both Maklan's (1977) and Masoner's (1979) studies connect the idea that employees are ultimately subjected to schedules chosen by employers. Relatedly, Roberts (2008) posits that employees who are in favour of a compressed work schedule such as the 4DWW are unable to experience the full benefits of improved work-life balance because time – when quantified – puts ‘work’ and ‘life’ in stark opposition.

- Leisure: The concept of leisure is normally attributed to an individual's free time and what they choose to do during that time (Neulinger 1981) and was explored in five studies. Several studies focused on demographic differences. Evidence across all five studies (Allen and Hawes 1979; Goodale and Aagaard 1975; Mahoney 1978; Mahoney, Newman and Frost 1975; Nord and Costigan 1973) indicates that people who ‘lead a more

active leisure-time lifestyle' (Allen and Hawes 1979) exhibit favourable attitudes towards the 4DWW. The fact that studies addressing leisure and the 4DWW are each from the 1970s is anachronistic in retrospect. In the United States, from 1977 to 2007, total working time expanded, mainly due to the increased participation of women in the labour force (Blundell, Bozio and Laroque 2013). However, the great resignation in the United States, wherein increasing numbers of employees quit their jobs starting in the Spring of 2021 and continuing into the Fall (Thompson 2021), may in part represent a renewed valuing of leisure.

- Gender and career advancement: Recent research has shown that women's career progression was more negatively impacted by the pandemic than men's (Lafkas, Christensen and Madsen, 2023). Not surprisingly, the theme of gender and career advancement was addressed in two recent studies by Beno, Hvorecky and Jenesova (2022) and by Chung (2022). Beno, Hvorecky and Jenesova's (2022) study examined country (Austria, Czech Republic, and Slovakia) and gender differences in workers' attitudes towards 4-day weeks and found across all three surveyed countries that women more often disagree with the shortening of the working week than men. This is an interesting result as Australian data shows 33.1% of men and 41.1% of women working full-time would prefer to reduce their working hours (Breunig, Gong and Leslie 2015). Chung's (2022) recent

conceptual study argues that a 4DWW has the potential to reduce labour market gender inequality and enhance social cohesion and worker welfare if social policy advisors take a leading role in its introduction.

- Productivity: Recent discussion in the popular press has often focused on whether productivity will decrease if a 4DWW is introduced (e.g. Gross 2022). Eight studies focused on productivity from as early as the 1970s to 2022. An early study by LaCapra (Trying Out the Four Day Work Week,1973, p. 216-220) at the Port Authority of New York and New Jersey, where the majority of employees worked from 08:15 to 18:00 on a 4-day schedule, did not yield any changes in productivity during a 10-week trial period. However, on a 5-day work schedule, employees often arrived earlier than their starting time and left well after their finishing time, whereas the 4-day work week saw employees arriving at 08:15 for the most part and leaving work at 18:00 sharp (LaCapra 1973). Similarly, production data for female workers in two factories revealed no changes in productivity following the change to a 4-day, 38-hour work week (Calvasina and Boxx 1975). Hartman and Weaver (1977) found a strong link between the 4DWW and its effects on productivity especially for manufacturing companies, which saw their start-up times decrease. Hedges (1973) found longer daily work hours and adverse working conditions (e.g. heat and noise), over 4 days, were likely to engender greater levels of fatigue, thus

undermining worker' health. Fatigue, however, was not significant as it did not alter injury rates or output (Hedges 1973). Topp et al.'s (2022) case study of a 4-day week for agile software development teams found this led to increased job satisfaction and productivity but was also associated with increased stress levels. Spencer's (2022, 402) critique uses a political lens and draws on claims by Marx and Keynes that societal progress involves '…extending "free time"'. He raises the challenge that businesses are only likely to accept a 4-day working week if it raises productivity and thus, from a COR perspective, is a resource.

Following the historical road, the four-day workweek has attracted fresh interest in the twenty-first century thanks to a number of convergent events. Particularly in automation and artificial intelligence, technological developments have sparked discussions about the direction of employment and the possibility for shortened working hours once more. Furthermore, emphasizes the need of work-life balance the growing awareness of mental health and well-being.

Rich countries actually work less as they get more and more productive (Giorgos Kallis , Michael Kalush , Hugh O.'Flynn , Jack Rossiter and Nicholas Ashford, 2013); they do not become rich by working more. Although industrialization

results in more working hours, later economic progress results in a decline rather than an increase of working hours .

Two groups emerge if one plots GDP per capita against weekly working hours in manufacturing for all the nations of the world: on the left side of the graph one finds developing (industrializing) nations (i.e., low GDP, lots of work); on the right, industrialized nations (high GDP, less work). Stated differently, industrializing countries work more than developed ones. Though the association is statistically significant only for the industrializing group , generally there is a negative gradient, meaning the more developed a country is, the less it works. Similar trends are shown by annual working hours per active person in the OECD: less developed nations, Korea, Portugal, Turkey or Greece are the ones that work the most. The more developed ones—like Germany, The Netherlands, or Luxembourg—work the least.

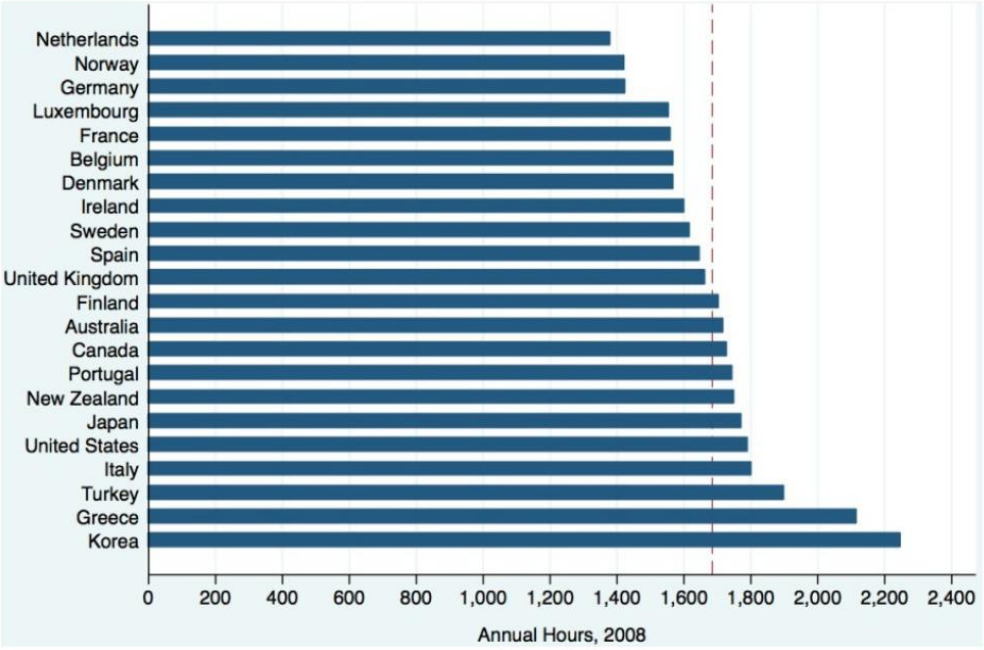


Figure 3, Annual hours worker per Country, Source: OECD 2008

1.4 4-Day Work Week around the world

The four-day workweek has lately attracted attention thanks to several well-publicized studies and projects. After running a four-day workweek experiment in 2018, Perpetual Guardian, a New Zealand corporation, saw notable increases in staff well-being and productivity.

Beginning in 2019, the COVID-19 epidemic hastened the adoption of flexible work schedules. Organizations and staff members saw the possibility for more freedom in work schedules as remote work grew common. The epidemic

underlined the need of reevaluating standard work paradigms and promoted a wider acceptance of unusual work schedules including the four-day workweek.

Examining case studies and regional points of view helps one understand the worldwide direction of the four-day workweek.

Successful implementation of the four-day workweek by Perpetual Guardian (4th chapter) first and then Unilever in New Zealand has motivated other companies and legislators to give such projects more thought.

With no reduction in compensation, Microsoft Japan's 2,300 workers participated in a new project called the Work-Life Choice Challenge Summer 2019, which allowed them to take five consecutive Fridays off. (The world economic Forum, 2022)

The organization came to the conclusion at the end of the experiment that the shortened workweeks led to more productive workdays, boosted employee motivation, and increased production by an astounding 40%.

In Asia Japanese larger companies are venturing into this territory, following the Japanese government’s announcement in 2021 of a plan to achieve a better work-life balance across the nation.

Trade unions across Europe are calling for governments to implement the four-day working week, but until now just a few countries reached official agreements. Belgium introduces a four-day workweek for employees who want it and

they became the first country in Europe to legislate for a four-day week.

In February 2022, Belgian employees won the right to perform a full workweek in four days instead of the usual five without loss of salary.

The new law came into force on November 21 in 2022, allowing employees to decide whether to work four or five days a week. (The Brussels Times, 2022)

But this does not mean they will be working less, in fact they will simply condense their working hours into fewer days. Belgian prime minister Alexander de Croo said he hoped that the change will help to make Belgium's notoriously rigid labor market more flexible and will make it easier for people to combine their family lives with their careers.

He also added the new model should create a more dynamic economy:

"The goal is to give people and companies more freedom to arrange their work time," he said.

In Spain the government agreed to calls from their leftwing allies to launch a modest pilot program of a four-day working week in December 2022. (Reuters, 2022)

The pilot help SMEs cut their working week by at least half a day, without reducing salaries.

The pilot is a test to see if productivity can be boosted. Companies signing up can receive aid from a €10 million government fund, but they must design ways to

increase productivity that compensates for the wage cost overruns, Spain's Industry Ministry said.

These improvements must be implemented within a year, while the company must stay on the program for at least two years. For the first year of the pilot the government will partly finance wage costs and will help to fund training to improve efficiency. On the same year the government of Valencia, Spain has also begun recruiting for a region-wide pilot of shorter hours in the private sector

Companies in the UK who ran a six-month trial of the four-day workweek are now planning on making the shorter workweek permanent, after hailing the experiment as "extremely successful". Some 61 UK companies and more than 3,300 employees signed up for the program, run by researchers at Cambridge and Oxford Universities and Boston College, as well as 4 Day Week Global, and other advocacy groups like the 4 Day Week UK Campaign and the UK think tank Autonomy.

Germany is already home to one of the shortest average working weeks in Europe. According to the World Economic Forum (WEF), the average working week is 34.2 hours. As of February 1, 45 companies in Germany started testing the 4-day workweek in an experiment that would last six months in total.

The initiative, which only involves companies whose work can be adapted to a shorter workweek, is led by Berlin-based management consultancy Intrapreneurs together with the non-profit organisation 4 Day Week Global (4DWG).

Following the success of other trial programs on the continent, Portugal has taken the plunge and joined a growing list of countries dabbling with the concept of a four-day week. With 72 per cent of people working over 40 hours a week, Portugal has the third longest workweek in the Organisation for Economic Co-operation and Development (OECD) countries, according to a report on the trial compiled by the Universities of London and Reading who are helping to oversee the trial.

Between 2015 to 2019, Iceland conducted the world's largest pilot of a 35 to 36-hour workweek (cut down from the traditional 40 hours) without any calls for a commensurate cut in pay. 2,500 people took part in the test phase.

To ensure quality control, the results were analysed by British think tank Autonomy and the Icelandic non-profit Association for Sustainability and Democracy (ALDA). The pilot was dubbed a success by researchers and Icelandic trade unions negotiated for a reduction in working hours.

Furthermore, very important in determining the acceptance of the four-day workweek are the cultural and financial settings of various areas. Scandinavian nations with strong social welfare systems and a focus on work-life balance, for example, could find it simpler to carry out such changes than those with more strict labor markets and economic systems.

Though the four-day workweek is becoming more and more popular and has favorable results, some issues and factors must be taken into account. These

include worries about possible disruptions to corporate operations, the requirement of organizational cultural changes, and the consequences for sectors with great need for ongoing services.

Critics contend that lowered workweek schedules might not be possible for every industry, especially those needing continuous personnel like manufacturing, emergency services, and healthcare. Changing management techniques, employee expectations, and performance evaluation also accompany the switch to a four-day workweek.

The historical route to the four-day working week is evidence of how dynamically labor rights and work have changed. From the early labor movements calling for decent working hours to the modern experiments with shortened workweek, the path reflects larger society tendencies toward balancing output with well-being. The four-day workweek offers a hopeful path toward building more sustainable, efficient, and rewarding work environments as technology continues to change the nature of employment.

Discussions and continuous experiments point to a turning point in the history of labor reforms. Even if obstacles still exist, the possible advantages for economic efficiency, employee well-being, and productivity make this model for the direction of employment appealing. The four-day workweek might become distinguishing characteristic of modern work culture as societies negotiate the complexity of the labor market of the twenty-first century.

2 - Working time in personnel economics

2.1 Theoretical background

At the microeconomic level, the number of hours an individual chooses to work depends on trade-offs between income and leisure.

The most crucial factor influencing hours worked is wages. As wages rise, people are more likely to work more hours because they will earn more money that way. On the other hand, leisure time becomes more expensive because taking more time off means not making as much money (substitution effect). Higher salaries simultaneously help people who can afford to work less maintain the same degree of income (income effect). Hours worked may rise or fall depending on which of these two influences prevails more. Empirical investigations have revealed that the individual labor supply is hump-shaped: for lower wages, the substitution effect predominates, while for higher wages the income impact rises gradually to the forefront (Blundell, 1992; Sharif, 2000; Tavor et al., 2022).

Apart from this basic theoretical framework, several other elements affect the choice of hours worked.

Through the income impact, an increase in non-wage income—that of other household members—may cause a drop in hours worked. While some people might have strong desires for cash and longer hours, others with strong preferences for leisure would choose to work less hours even at lower pay rates.

Cultural and societal elements including age, gender, and income shape personal preferences for leisure. The number of hours each person works also depends on choices regarding home production and childcare, which the family circumstances dictates. People can choose to work more while their pay are greater and postpone leisure to times with lower wages (e.g., to old age), therefore adding a dynamic component to the decision on working hours. Individual decisions can be greatly influenced by public policies like minimum wage laws, taxation policies, employment protection legislation, policies encouraging female labor force participation and family policies as well as by labor market rules.

In Personnel Economics the worker's commitment is presented as ξ. In the following, two specific dimensions of commitment will be considered, the working time (the extensive margin of commitment) and the effort (the intensive margin) (Staffolani, 2020):

– working time, defined with $h_{i,j,t}$ (worker i employed at firm j at time t). It can be set by the law, unilaterally decided by the firm, bargained between the firm and the workers and,

in some cases, decided unilaterally by the worker. It can be computed in hours per day, days per week, days per year.

– worker's effort per unit of time, defined with $e_{i,j,t}$, that can been thought as the share of time the employee spend working effectively instead of doing other things during normal working time. In the case of perfect information on the job, effort is chosen by the firm. With asymmetric information, the worker can choose the effort to some extent. In the latter case, the choice of the worker depends on the overall characteristics of the job.

Therefore, $e_{i,j,t}$= ξ (hi, j,t , ei, j,t) holds. Commitment is a function of working time and effort. It is increasing in both variables.

working time, that is the period during which each employee works at firm's disposal and carries out her activities and duties.

This amount of time can be spent on daily basis, weekly or yearly and it is affected by the length of paid holidays, the time of rest during the working day, the working leaving period and so on.

Working time is not completely controlled and chosen by the firm.

It came also be set by the Government or by collective agreements; they can also choose or bargain for overtime hours.

They can choose if the contract will be full time or part time or bargain the amount together.

In synthesis working time is a strategic tool in the hand of the HRM (Human Resources manager)

In theory he is always able to define the optimal level of working time for each of the employees in the firm.

Productivity of the workers of course doesn't depend just on working time but on the effort produced per unit of time.

In order to reason on working time some assumptions can be made (Staffolani,2020):

- Productivity of the worker (Y) is given by : $y=\theta h$ so a worker endowed with a given talent can vary his productivity by varying working time
- The employees' utility function is given by: $u = vh - \delta\frac{h^2}{2}$ where v is the wage per unit of time and the wage a worker earns is given by $w= vh$. The disutility due to work depends negatively on working time
- Each employee is characterized by a reservation utility $\bar{u}$, and that the participation constraint requires $u>\bar{u}$, with the equal sign if the firm can get all the rent generated by the job. For simplicity, we assume $\bar{u} = 0$
- The firm has to consider two different types of labor cost to face: variable (given by the hourly wage time the hours worked) or fixed (they do not depend on working time, and they can be recurring or non-recurring). The cost of each employee includes variable and fixed cost $vh + F$.

After those hypothesis it is possible to argue that the total cost due to labor usage is $C = (\nu h+F)L$ and the total output is assumed to be given by: $Y = \theta hL$

The goal of the HRM is to minimize the cost per unit of the product.

In the presence of recurring fixed costs and without any constraint on the firm behavior and a given effort level for each worker, the cost per unit of product is minimized if h, the working time, tend to infinity. But obviously, the hourly wage cannot be considered exogenous.

The interesting results are:

• the optimal working time is higher if fixed costs are higher and if the "laziness" of the employee is lower. Remarkably, nor the talent of the worker neither his bargaining power affect the working time. Wage per unit of time ν is instead dependent on talent and bargaining power.

• total production Y does not affect working time. A firm that need to produce $\overline{Y_y}$ as total output at time t, and given $\overline{Y}$= yL, with $y = \theta h^*$, reacts to variation in the desired total output in the different period of time by changing the employment level alone.

Working time does not behave like employment level that adjust to shocks, it doesn't follow the same pattern. The situation appears to be counter-intuitive because firms usually ask overtime or working time reduction to their employees in order to deal with temporary variations in the demand for their products. In this

case the shock appears to last only for a given number of periods, so it is temporary.

The workers and the firms usually bargain both on the wage rate and on working time.

Assuming instead that working time is chosen by firm once that wage rate has been bargained, we obtain the result that the optimal hours worked in a period depends positively on the per-worker fixed cost and negatively on workers' laziness.

They do not depend on the talent od the worker nor on the total output, that affect only the per-period wage and the number of employees.

However, considering fixed, not-recurring labor cost, we conclude that the total output can influence also working time and that the intensive adjustment is more likely to be preferred when the expected variation of total output (the shock) is assumed to last for a few numbers of periods. Therefore, transitory shocks on total production should affect the working time, whereas permanent shock is more likely to affect the overall level of employment.

In the case of individual bargaining, the above results imply that working time should be higher for more talented and less lazy employees.

In the case of collective bargaining, nevertheless, thinks are strongly different: the results obtained above define the value of v, say $\bar{v}$ and h, say $\bar{h}$ that must be applied to all the workers, independently of the talent and laziness that characterize

each employee. (Staffolani, 2020) Therefore, with collective bargaining, there can exist workers that would like to work a longer or lower number of hours at the bargained wage.

2.2 Topics relevant for the 4-day work week

The exploration of working time and labor economics through the lens of personnel economics reveals several important implications for the four-day workweek. By analyzing the trade-offs between income and leisure, the factors influencing hours worked, and the dynamics of employee commitment, it is possible to draw several conclusions relevant to this emerging work model.

-Trade-Offs Between Income and Leisure: The four-day workweek introduces a significant shift in the balance between income and leisure. As noted, the substitution effect suggests that higher wages typically encourage more work, while the income effect allows for reduced working hours without a loss in overall income. Under a four-day workweek, employees may experience a more pronounced income effect, potentially reducing their working hours while striving to maintain their standard of living. This shift could be beneficial for workers seeking better work-life balance but might challenge firms to adjust their operational strategies to maintain productivity.

-Productivity and Working Time: The relationship between working time and productivity is complex. The theoretical framework indicates that the optimal working time is influenced by fixed costs and employee characteristics such as “laziness” and effort levels. A four-day workweek could necessitate an increase in daily working hours to compensate for the reduced number of days, depending on the firm's need to balance labor costs and output levels. Firms might need to adopt new strategies to optimize productivity per hour worked while managing the overall reduction in workdays.

-Impact of Employee Commitment: The concept of worker commitment, encompassing both the extensive margin (working time) and the intensive margin (effort), is crucial for understanding the four-day workweek. If the reduction in workdays leads to increased job satisfaction and higher employee effort during the condensed workdays, firms could benefit from enhanced productivity per hour. However, this outcome depends on the ability of workers to adjust their efforts and the firm’s capacity to manage this new work structure effectively.

-Bargaining Dynamics: The impact of collective and individual bargaining on working hours further complicates the implementation of a four-day workweek. Individual bargaining allows for tailored adjustments based on specific employee needs and characteristics, potentially leading to varied outcomes across the workforce. In contrast, collective bargaining could standardize working hours, which might not align perfectly with individual preferences. This divergence

highlights the need for careful negotiation and policy design to ensure that the four-day workweek meets the needs of both employers and employees.

-Strategic Implications for Firms: Firms must strategically manage the transition to a four-day workweek, balancing the need for increased daily working hours against the potential benefits of improved employee well-being and reduced turnover. The adjustments required to optimize productivity, manage labor costs, and accommodate employee preferences will be critical to the successful implementation of this model.

In summary, the four-day workweek presents a complex challenge and opportunity from the perspective of personnel economics. While it offers potential benefits in terms of work-life balance and productivity per hour, its success depends on how well firms and employees navigate the trade-offs between income and leisure, manage productivity within a reduced number of workdays, and address the dynamics of employee commitment and bargaining. The insights from personnel economics provide a valuable framework for understanding these implications and guiding the effective implementation of a four-day workweek.

3 – Institutional framework about working time in EU

3.1 Main international regulations

An important part of health and safety at work is working hours.

It has its roots in the EU acquis. Article 31 of the Charter of Fundamental Rights of the European Union (2000) says that fair and just working conditions include the right to set limits on the number of hours worked, to daily and weekly breaks, and to paid time off once a year.

The EU's working time directive (2003/88/EC) sets the basic standards that everyone in the EU must follow right now.

The directive's main goal is to protect workers' health and safety, which is in line with principle 10 of the European Pillar of Social Rights. This principle says that workers should have a healthy, safe, and well-suited place to work. It requires EU member states to protect workers' rights to breaks, paid annual leave, overtime, and a limit on weekly working hours (48 hours on average over 7 days), as well as to make sure that workers get paid for work they do not do. However, most of these rights can be broken.

In each Member State, the legal limits and real hours are different.

Legal weekly hours are either capped at 48 hours, which is what the working time law says, or at a lower level of 40 hours. The only countries where the legal limits are lower are Belgium and France, where they are 38 and 35 hours, respectively. Most of the time, collectively bargained maximum weekly hours are smaller, and in some EU Member States they are more important. In the EU in 2020, the average number of agreed-upon normal work hours per week was 37.8 (Eurofound, 2021). In most Member States, you can only work overtime for 48 hours a week.

In the EU, these upper limits on work hours have not moved in the last few years. There are big changes in the average normal annual hours between Member States. This is because of differences in weekly hours and vacation time rules. Normal working hours range from 1,574 hours a year in Germany to 1,848 hours a year in Hungary and Poland.

3.2 Changes and trends after Covid-19

In response to the COVID-19 outbreak, Member States changed their rules to allow for both more and less working hours.

New rules made it easier for people to work from home and changed how work time is organized. As a way to make sure that essential or critical services (like healthcare) can be provided and to help workers in these areas handle their extra workload, some Member States made it possible to work longer hours by extending the minimum daily or weekly rest periods, raising the maximum daily and weekly working hours, and letting workers work overtime. This was mostly just a short-term fix that is no longer in effect. At the same time, short-term work or partial jobless programs let people cut back on their work hours or stop having to work altogether, while still making up for lost wages.

In the EU and most of its member states, the average number of hours worked by each worker has been slowly going down since 2008.

The average number of hours spent each week and each year went down. (European Commission, 2023) According to self-reporting, the average number of hours worked each week by employed people in the EU fell from 38.3 hours in 2008 to 37.5 hours in 2022, a 2% drop. The drop was even bigger for self-employed people, whose average number of hours worked each week fell from 45.7 in 2008 to 42.9 in 2022, a 6% drop.

In the EU, the average number of hours worked each year dropped from 1,651 to 1,566 hours (-5.15%) from 2008 to 2022. This drop is bigger than the drop in the number of hours worked each week because holiday and sick days, as well as the length of the work week, affect the number of hours worked each year.

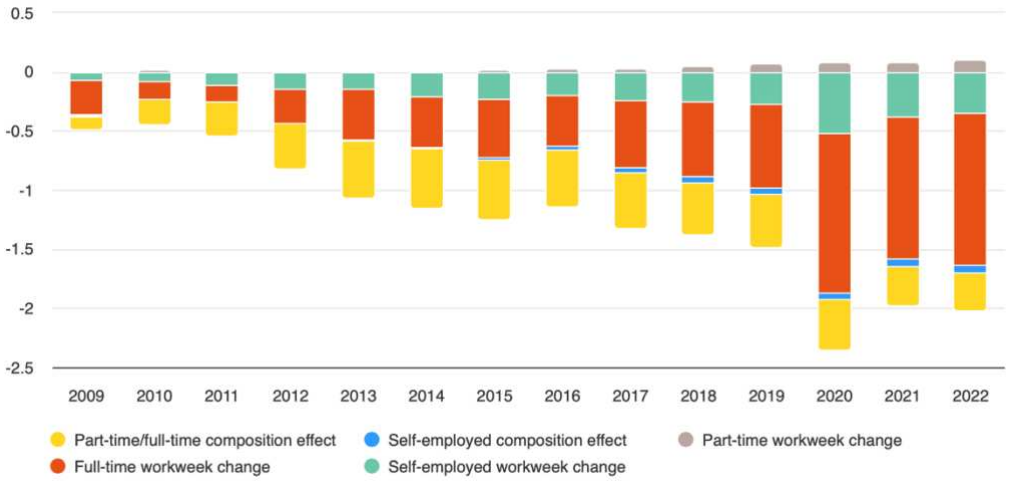


Figure 4, Changes in hours worked per type of contract , Source: Eurofound, EWCTS 2021.

Changes in the average number of hours worked each week can be broken down into changes in the makeup of the workforce and changes in the amount of time worked in each job. The above graph shows how the factors that cause changes in the average number of hours worked each week in the EU add up over time.

The average number of working hours in the EU fell by about the same amount between 2009 and 2015. This was due to changes in the makeup of employment, with more people working part-time, and shorter full-time work weeks. After 2016, the trend changed. The main part of the drop in average weekly working

hours at the EU level was the decrease in average weekly working hours for full-time workers and self-employed people. This is even more true now than it was in 2020, when people worked a lot less because of the plague.

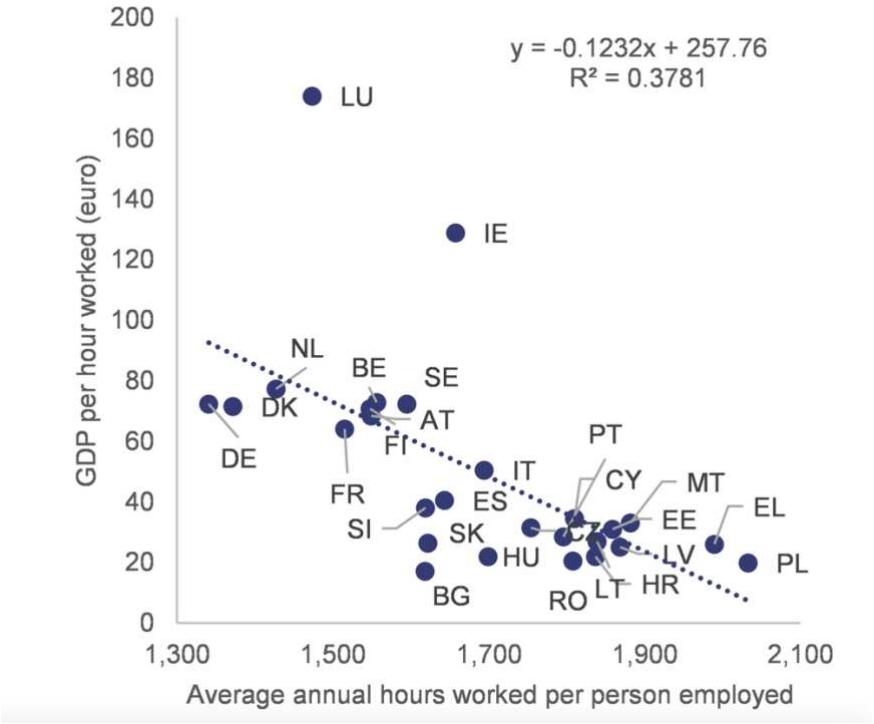


Figure 5, Average annual hours worked per person employed, Source: AMECO and Eurostat. (2023)

A country's level of economic development is linked to the average number of hours spent each week in a bad way.

The above graph shows that workers in richer countries are more productive, as shown by their GDP per hour worked. This means that workers can spend less time working and more time having fun (Giattino and Ortiz-Ospina, 2020 and Morley and Sanoussi, 2009). This might be because of the income effect, which makes people want to spend more time relaxing as the economy grows. But the number of self-employed, part-time, and full-time workers also affects the differences between countries in the average number of hours worked each week. For the years 2008 to 2020, people in Spain, Greece, Portugal, and eastern European member states worked more than the EU average of 40 hours per week. While this was going on, Belgium, Denmark, Germany, Ireland, France, Italy, the Netherlands, and Finland were the only EU member states where people worked fewer hours on average each week than the average.

During recessions, the drop in hours worked per worker tends to speed up, and during rebounds, hours do not always fully return to where they were before the crisis.

During the COVID-19 pandemic, there was a sharp drop in the number of hours worked across the EU. This was because of the widespread use of short-term work plans and other job-retention measures that encouraged people to work less, which slowed the drop in unemployment. In 2023, the average number of hours worked each year by each person in most Member States stayed below what it was in 2019. A very small number of EU countries, like Estonia and Poland, had more

hours worked on average in 2022 than they did in 2019 (by 4.4% and 1.8%, respectively). Because of new technologies that make work more efficient and productive after recessions, hours spent may not go back to where they were before the crisis. At the same time, more people started working from home during the pandemic, which is linked to longer average weekly working hours across the EU.

3.3 Preferences for working hours

It is generally thought that workers would prefer fewer hours, and this feeling got a lot stronger after the COVID-19 outbreak.

From 2015 to 2021, the average weekly chosen reduction went up from 2.2 working hours to 5.5. In general, this rate is higher for men, who wanted 2.9 and 6.3 hours less work each week in 2015 and 2021, respectively. On the other hand, women would rather have between 1.3 and 4.5 hours less work each week in 2015 and 2021.

Families with more money and better education would rather work fewer hours. With more schooling and more money in the family, the preferred number of hours goes down. From 2015 to 2021, this choice became clearer. These changes in tastes could be because of how work was organized during the COVID-19

pandemic. These changes were more noticeable for workers with more education. The difference between real and desired hours can mean that both groups are working too many hours. On the other hand, households that are having a hard time making ends meet are more likely to work longer hours each week and say they would rather not work less than the normal household.

Treatment	Usual hours	Preferred hours
Financial difficulties	**1.02**	**1.16**
Female	**-4.78**	**-1.79**
Second job	**6.66**	**-0.62**
Low education	-0.65	0.46
High education	0.39	**-0.87**

Figure 6, Survey asking usual and preferred hours for working, Source: Eurofound, European Working Conditions Telephone Survey 2021.

Looking at figure 6, it is possible see how different things affect both people's real and desired work hours. For example, people who are having trouble with money or who have a second job tend to work more hours than others, but different people have different ideas about how to work fewer hours. Gender also plays a big part; on average, female employees work fewer hours and would rather work

fewer hours than male employees. Different levels of education have different effects on work hours. People with more education work a few more hours but would rather work fewer hours than people with less education.

Working hours are a big part of how well a job is done.

When working hours go beyond a certain point, they can lead to problems with the quality of the job, like mental and physical stress, overtime, and sick days taken. However, working shorter hours might not always mean more job satisfaction or better results. This is because people who have full-time jobs may be more fully engaged and feel more ownership over their tasks. They may also benefit more from coworkers and amenities like trainings, and they may have better career prospects than people who work part-time.

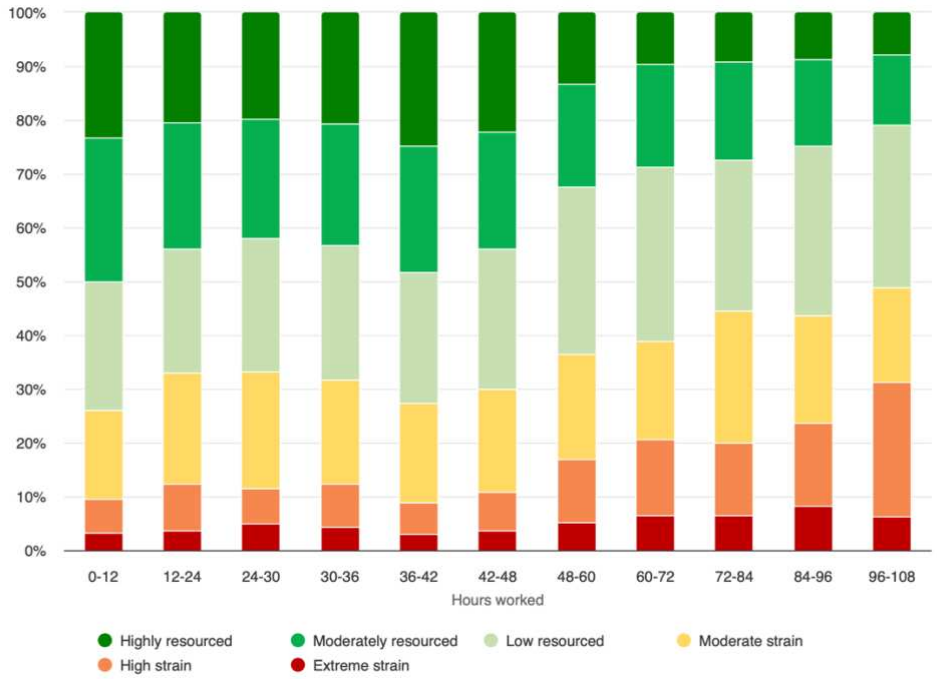


Figure 7, Hours worked and quality of work, Source: Eurofound, EWCTS 2021

The graph clearly shows a trend: as the number of hours worked goes up, the percentage of highly resourced job situations goes down a lot, while the percentages of mild strain, high strain, and extreme strain go up. The best job quality is for people who work the fewest hours (0–12 hours), and most of them are highly resourced.

As hours go up, so does the quality of the work, and most people who work more than 60 hours have few tools and are under a lot of stress.

This shows that working longer hours is linked to less satisfying work and more stress at work.

3.4 Some recent findings

Since 2008, the average number of hours worked each week by each worker in the EU and most of its member states has been slowly going down.

Since the pandemic, jobs and hours worked have changed how they respond to the business cycle. In most EU countries, hours worked still have not fully recovered since then. (European Commission, 2023)

Before the pandemic, hours and employment tended to follow the business cycle. During the COVID-19 slump, more short-term work and other ways to keep jobs were used, which broke this trend. After a recession, work hours often do not go back to where they were before the crisis. This is usually because people have to adjust to new technologies.

The pattern of weekly hours spent is very different for different groups of people. People who are having trouble finding work tend to work fewer hours each week. This includes: (i) women, since they work fewer hours per week than men; (ii) younger workers, since they are more likely to work part-time and work shorter hours in general; (iii) workers older than 50, since they work fewer hours per week when they are self-employed or working full-time; (iv) workers who came

to the U.S. illegally; and (v) people who can not get enough care for children or the elderly. People who are self-employed and have more schooling, on the other hand, tend to work longer hours each week.

After the COVID-19 recession, people are more open to new types of work, and they want a better mix between work and life. In this way, flexible work plans can help some businesses find and keep good employees. More study needs to be done on the effects of reducing working hours on productivity, jobs, and the environment in order to add to the debate.

Based on what has happened in the past, requiring workers to cut back on their hours may not improve the well-being of workers with different tastes. Instead, customized solutions could better deal with the problems of underemployment and overemployment.

In fact, options that give people more choices about their weekly hours, as long as they do not go against the EU's working time rule, might help solve the problem of both too few and too many jobs in the EU labor market. Some groups of workers could have their weekly hours cut, either through collective deals or because companies choose to change how they work. As another step, administrative barriers could be lowered so that underemployed people have more options for changing their work hours. This would be done while still ensuring

that part-time and full-time workers are treated equally and the risks of flexibility are taken into account.

4 – Different type of Pilots

There are multiple reasons for organizing the several four-day week pilots. It helps legislators and researchers to evaluate similar pilots, what has been investigated, and the significant gaps in the body of current data. Furthermore made possible by categorization is a more focused examination of the particular kinds of target groups. At last, by spotting commonalities and variances among pilots, pertinent stakeholders can pinpoint regions needing development and maximize the planning for next actions.

Whether the company presenting the intervention is public or private, one possible classification approach is based on the ownership and type of the entity. One must understand that public and private sector dynamics differ, and that knowledge gained in the public sector could not be immediately applicable to staff members of the private sector. In the private sector, there could also be a difference between pilots who test the four-day week in one firm and those including numerous companies. The following table summarizes the salient features of these pilots.

	Private Sector Pilots		Public Sector Pilots
	Multiple-company pilots	**Individual-company pilots**	
Strategy	Coordinate volunteering businesses willing to introduce the four-day week	Volunteering business introducing the four-day week to employees	Select workplaces within a public administration to introduce the four-day week
Unit of intervention	Businesses	Employees	Workplaces
Data	Businesses and employee data	Employee data	Workplace and employee data
Evaluation method	Before-and-after comparisons	Before-and-after comparisons	Enrolled-and-unenrolled comparisons
Promoter	Advocacy organisations and governments	Individual firms	Governments
Countries where it is tested	UK, USA, Ireland, New Zealand, Portugal, Spain	UK, USA, Ireland, New Zealand, Portugal, Spain, Japan	Sweden, Finland, Iceland, Portugal

Figure 8, Private Sector Pilots and Public Sector Pilots summarized, Source: Joint Reasearch Center for the European Commission, 2023

The sustainability of the four-day week policy idea depends on private-sector involvement since it calls for a decrease in working hours without a matching pay-off. Therefore, determining whether companies can effectively apply this transformation is important.

Piloting can find possible advantages or drawbacks for companies using the four-day week in terms of staffing and schedule changes as well as assess how it

affects important business indicators such output, profitability, and employee well-being.

On the other side, the public sector is a major employment and service supplier to the society, thus it is vital to know the possible effects of a four-day workweek on its employees and service delivery. Over the public sector, several pilot initiatives have been carried out providing insightful analysis on the possible effects of shortened working hours on public sector organizations and staff.

4.1 Private Sector pilots

4.1.1 Multiple Company Pilots

To boost the sample size and representativeness of the impacts, some advocacy groups are arranging simultaneous pilot projects involving various businesses. This strategy helps them to concurrently teach and coach several organizations and build a network of interested companies ready to cooperate and grow together.

Claiming to be working with over 180 companies across multiple nations, the advocacy group 4 Day Week Global (4DWG) Foundation is now advocating the largest private-sector pilot to date. Along with a data-collecting relationship with researchers at Boston College, Cambridge University, and Oxford University (Cohen, 2022), the initiative is run in tandem with the think tank Autonomy.

Under the backing of the 4DWG, the 4 Day Week Campaign, and other advocacy groups, private-sector pilot studies underlie ongoing activity in the UK, US, New Zealand, Australia, Ireland, and Canada. For instance, more than 70 UK companies took part in a pilot from June to December 2022; the first findings from 33 organizations mostly situated in Ireland and the US were lately disclosed at the end of 2022 and are presented below as one of the case studies (Schor et al., 2022).

seven

Many governments are also guiding private-sector pilots working for several corporations. For example, Valencia's regional administration as well as the national government of Spain are getting ready to send first pilots into Spain (Kassam, 2021). Furthermore preparing their pilots with several firms are the Portuguese and the Scottish (Tzvetozar, 2022).

Other pilots with several organizations engaged rely just on qualitative study and lack comparable quantitative data, for one with small and medium-sized businesses (SMEs) in the financial services industry in New Zealand (Delaney et al., 2021).

Since most private-sector pilots work for small and medium-sized companies, which is pertinent given the bulk of business ecosystems are they involve. For instance, one private-sector pilot in Switzerland comprising several more sizable Swiss corporations (Neubert et al., 2022). In this situation, though, the wage cut

included a workday decrease and should not be included into the recent four-day week.

4.1.2 Case Study: 4 DayWeek Global

The 4DWG (4-Day Week Global) Foundation helped businesses and non-profit organisations interested in implementing a four-day workweek with no pay cut in 2022, therefore producing the first coordinated six-month experiments and a significant worldwide research project on the effects of a four-day workweek (Cooban, 2022).

Recent research findings from the first two pilots, which had 33 volunteer organizations and a total of 903 people, were given by the 4DWG (Schor et al., 2022).

Apart from four companies from the US, Australia, and New Zealand, most of the companies—12 companies from Ireland, 11 companies—were based entirely remotely. With two months of company preparation, the pilots were from February to August 2022 and from April to October 2022; they attended seminars, coached and mentored, and participated in a peer support network for the companies. Two distinct pilots nevertheless still have been investigated and analyzed as a single project.

Of the 33 companies, 29 of them adopted a four-day week for all employees while the other four companies cut daily hours for a subset of employees who stayed on a five-day schedule. Companies were not obliged to follow a specific work time reduction strategy or a four-day week to participate in the pilots.

Of the 33 companies, 27 answered a final survey asking about their general experience with the four-day schedule and whether they will be continuing.

For employee data, the last matched sample size came out to be 495 workers who answered baseline and endpoint surveys.

Apart from helping the pilots, the 4DWG also supplied research done by academic scholars from Cambridge University, Boston College, and University College Dublin. Two sections made up the study: one on administrative data from the participating businesses and the other on self-reported survey data gathered from workers with ranges applied to different outcomes. Both times, the evaluation technique was a before- and- after comparison.

4.1.3 Individual companies

Apart from private-sector pilots engaged in several organizations, there are also individual company-led pilots whereby some employees willingly engage in a

four-day week. Usually supporting these pilots are advocacy groups and university researchers, however they are not part of a larger pilot program including several corporations. The think tank Autonomy found twelve of these pilots in 2019, most of which were operated by small, creative businesses such Agent Marketing, a Liverpool marketing company, and Conversation Creation, a PR and marketing agency in Bristol (Stronge & Harper, 2019). There is no centralised database gathering all individual four-day week pilots, though, and it is challenging to estimate how many are now under progress.

Perpetual Guardian, a New Zealand company running trusts, is the most well-known company implementing the four-day workweek at the corporate level. It is featured below as one of the case studies since it ran a four-day workweek pilot among its staff in 2018 and finds great significance.

In bigger corporations, there have also been working time reduction trials. For instance, Volkswagen in Germany cut the 36 to 28.8 hour working week (Seifert & Trinczek, 2000). More lately, Microsoft Japan reported a 40% increase in productivity by running a four-day workweek (Chappell, 2019).

The second Some big businesses, such Telefónica in Spain, choose to have a four-day week but with pay cutback (Sanchez & Galindo, 2022). These thus fall outside the trend of the current four-day week.

While these company-level pilots can be useful in specific and concrete situations, their outcomes are likely to be context-driven therefore they have less external

validity than private-sector pilots involving several companies. Although most of these businesses have minimal information available to the public, generally these have shown good performance, which makes thorough analysis challenging.

4.1.4 Case Study: Perpetual Guardian

Perpetual Guardian, a New Zealand trust, wills and estate planning organization, started an eight-week four-day workweek trial in March 2018. The organization was interested in encouraging staff members to take a day off rather than cramming their working hours into fewer days. Workers were paid the same and expected to produce the same degree of excellence. Employees worked for thirty hours overall, but they were compensated for 37.5 hours. It is not known, though, how many staff members worked exactly four days instead of five.

The first of its sort at the corporate level, the Perpetual Guardian pilot attracted a lot of interest outside. After claiming a 20% rise in staff productivity and a 45% improvement in work-life balance, the pilot attracted worldwide news coverage in the spring of 2018 (Chappell, 2019). The company was so pleased following the eight-week trial that it let employees choose to participate in the four-day work

schedule across its operations. According to certain sources, the policy has been adopted permanently lately.

Official documents state the pilot engaged all 240 staff members. Respondents for the analysis were matched according to the baseline and endpoint surveys, producing a final sample of 122 staff members.

Comprising a matched sample of 27 respondents, the study also included a survey of superiors. The study evaluated several outcomes using a set of ranges and depending on self-reported data. The baseline and endpoint questionnaires allowed the evaluation to be done via a before-and-after comparison.

Working with academic institutions, The University of Auckland and Auckland University of Technology, Perpetual Guardian assessed employee engagement level. The primary researcher supplied some relevant quantitative data that would help one evaluate the pilot's performance (Haar, 2018). Still, as the study notes, this is simply a synopsis of first data released in July 2018. No more publically published publications with more conclusive evidence as of early 2023.

4.2 Public sector pilots

Before the current boom of four-day workweek pilots, the Nordic countries were the first to undertake pilot initiatives for public sector employees in the early

2000s. For instance, for 23 months a pilot project in the Swedish city of Gothenburg evaluated the effects of shortened working hours in a retirement home (De Spiegelaer & Piasna, 2017). Workers in this program worked 30 hours a week instead of a retirement house lacking the chance to cut working hours. With an eye especially on health outcomes, these pilot initiatives concentrated mostly on investigating the effects of shortened work hours in Sweden and Norway (Åkerstedt et al., 2001).

Finland also ran eight pilot projects (Nätti and Anttila, 1999). These early-stage pilot projects, however, had relatively narrow target groups—such as personnel in nursing homes, centers for the elderly, dental healthcare, or kindergarten—as well as non-random comparison groups and small sample sizes.

Still, run in Iceland from 2015 to 2019, the biggest public-sector pilots in the Nordic nations were run there, where some public employees reported a 35–36 hour workweek without pay decrease (Haraldsson & Kellam, 2020). This working paper includes one of the case studies based on the relevance and worldwide attention of this pilot project.

For some public employees who lacked a reduction in working hours, several governments have instituted a four-day week. They had to so work the same number of working hours compressed into four days, which would be out of scope for our study. These include the state government of Utah in the USA from 2008 to 2011 or, more recently, the Belgium government pilot in 2021 (Martens &

Pronina, 2022). In 2022 the Spanish government set out €9.65 million for small- and medium-sized industrial companies interested in seeing what happens when they allow their employees to work fewer hours. Participating companies must cut at least 25% of staff's working hours by at least 10% for two years to get the subsidies. Other governments, like those of Scotland and Portugal (Tzvetozar, 2022), want to operate four-day week experiments for public sector workers with lowered working hours and no pay cut.

4.2.1 Case Study: Iceland

Responding to trade union and civil society campaigns, the Reykjavík City Council and the Icelandic National Government started two significant pilots of a reduced working week in Iceland in 2015 and 2017. Depending on the specific workplace, the pilots engaged a varying reduction in working hours; remuneration was not changed. Complementary data indicates that 47% of companies cut one or two hours of working time, 45% cut three hours 11 and 8% cut four hours.

Average workplaces cut 2.4 hours of working time. Two distinct pilots nonetheless have been evaluated and examined as a single effort.

Starting in March 2015, the initial Reykjavík City pilot included two offices and a few dozen employees. Over the next years, it grew to about 2,500 employees, albeit it is unknown how the sample changed over time. The extra data reveals that 61 companies in all took part in the experiment. At the start of the pilot, an extra workspace was included as a comparison group; it is not clear how it was chosen or whether other workspaces were included in the comparison group.

The pilot was carried out at offices, theaters, city maintenance facilities, and care homes among quite different environments. Staff members returned to their regular working hours once the pilot concluded on September 1, 2019. Still, agreements were struck a few months later promising less hours.

Another national test starting in April-May 2017 had 17 sites applying and 4 chosen, including the Directorate of Internal Revenue and a police station. There were five offices overall involved in the experiment. For the pilot not receiving the four-day week mandate, four additional companies were chosen as comparison groups. There are not stated the group selection criteria.

Official estimates indicate that the intervention group consisted of about 440 staff members, out of which 364 in comparison group workplaces. The experiment concluded in 2021; it is not clear when the offices closed or whether they did so concurrently.

Both as part of their regular business and especially for the pilots, the Reykjavík City Council and the Icelandic Government frequently carried out quantitative studies based on administrative and self-reported data gathered on many polls for treatment and comparison groups.

A think-tank called Autonomy released a final study compiling all the pertinent quantitative data to help to evaluate the pilots generally (Haraldsson & Kellam, 2021, authors of the 4DWG's Iceland report).

Overall, the results of the trials show that the reductions in working hours:

-Maintained or increased productivity and service provision.

-Improved workers' wellbeing and work-life balance.

As mentioned earlier, a central aim of both trials was to ensure service provision remained the same following reductions in working time. To be able to work less while providing the same level of service, changes in the organisation of work therefore had to be implemented. Most commonly, this was done by rethinking how

tasks were completed: shortening meetings, cutting

out unnecessary tasks, and shifts arrangements (Government of Iceland, June 2019; Jóhannesson & Víkingsdóttir, 2018; Kjartansdóttir, Kjartansdóttir & Magnúsdóttir, 2018).

The trials are important because they show that reducing working hours works. The trials' size and scope are also important. At their peak, they included more

than 1% of all Icelandic workers, as well as places of work and businesses that most people think would not be able to switch to shorter hours, like schools and maintenance shops. Because of this, the Icelandic trials can serve as a model for how reducing working hours can be a powerful, desirable, and doable policy in today's advanced countries.

At the moment, anyways, the public sector in Iceland didn’t see its working days shortened but the Government reduced the number of working hours by law moving toa 36-hour work week, with the possibility of 32 hours for those who work around the clock.” (Friðjónsdóttir & Jósepsson, 9 March, 2020) which was called as the greatest progress we have seen in over 40 years” (Rúnarsson & Arnljótsdóttir, 1 May 2021).

	Multiple-company Pilot	Single-company Pilot	Public Sector Pilot
	4 Day Week Global	Perpetual Guardian	Iceland
Relevance	First two pilots of a longer list of pilots run during 2022 and 2023	First pilot run by an individual company	Two largest pilots run by the Reykjavík City Council and the Icelandic National Government
Locations	Remotely, Ireland, US, Australia, New Zealand	New Zealand	Iceland
Intervention length	6 months	2 months	Approximately 4 years and 6 months
Period of intervention	First pilot from February to August 2022, and second pilot from April to October 2022	From March 2018 to May 2018	First pilot from March 2015 to September 2019 and second pilot from May 2017 to 2021
Original sample	33 companies and 903 employees	1 company and 240 employees	66 public workplaces and 2,500 employees
Expected change in hours worked	From 40 to 32 hours	From 37.5 to 30 hours	From 40 to 35 or 36 hours on average
Adopted a four-day workweek?	Yes	Unclear	No
Supporting organisations	Boston College, University College Dublin, and Cambridge University	The University of Auckland and Auckland University of Technology	The think-tank Autonomy

Figure 9, Results of the pilots Source: Joint Reasearch Center for the European Commission, 2023

5 – 4-Day Week Global Organization and its largest pilot

5.1 How does the project work

At the end of the previous chapter, it is emerging that the most attractive types of pilots, after some initials and useful single-company pilots are the ones given by multiple companies, in specific countries under the guide of the 4 Day Week Global organization. They were able to catch the attention of entrepreneurs, prestigious universities and national governments in just a few years giving a huge contribute to research in this field about the sustainability of this weekly structure. Something has been said previously with also case studies and data, but a comprehensive introduction of their activity has to be done anyways.

The 4 Day Week Global group is part of a movement that wants to change the way people work and the laws that govern it. This group's only goal is to get companies all over the world to switch to a four-day work week as normal. The idea behind this initiative is that this kind of change can boost productivity, improve the health and happiness of workers, and have good effects on society and the environment. According to them the five-day work week has been the norm for more than one hundred years. 4 Day Week Global wants to promote a more balanced approach to work and life by questioning this long-standing practice.

The main goal is to speed up a worldwide shift toward a more sustainable and decent way of working. By pushing for a shorter work week, 4 Day Week Global hopes to make work and life more balanced so that workers can have more free time without hurting productivity or economic growth. The OECD (Chapter 3) found that countries with shorter average work hours tend to have higher rates of productivity, this suggests that shorter work weeks can make people more productive.

To reach its aim, 4 Day Week Global has set a number of long-term goals. To begin, they want to make more people aware of the advantages of working only four days a week by promoting and teaching these ideas. The group wants to let the public and stakeholders know about the good things that happen when working hours are shortened by sharing successful case studies, research results, and talking to the media.

In addition to speaking out, they want to change the rules. With the help of governments and lawmakers, the group wants to make laws that make it easier for people to work fewer hours. This means pushing for changes to be made to labor laws and rules so that a four-day work week can work and is encouraged.

Another important goal for 4 Day Week Global is to get companies involved. Businesses and the group work together to test and roll out four-day work week plans. It helps firms make the change easily by giving them support and resources and keeping track of how it affects productivity and employee happiness.

In their website it is possible to find 9 reports (as of middle 2024) involving countries that are part of different continents, cultures and markets. Each of them has the support of prestigious researchers from the most important local universities.

Supporting and doing study is important to the organization's goals. Four-Day Work Week Global funds research to look into how a four-day work week affects different areas of health, society, and the economy. This study gives useful information that can help to make policy decisions and run our businesses. A study from the University of Reading, for example, showed that a four-day work week could cut the UK's carbon footprint by 127 million tonnes per year. This shows how good this change would be for the environment.

Moreover, 4 Day Week Global wants to create a worldwide connection of groups, companies, and people who support the four-day work week idea. This network makes it easier for people to share their thoughts, experiences, and the best ways to do things. This builds a group of dedicated advocates for the cause.

Andrew Barnes and Charlotte Lockhart started 4 Day Week Global in 2018. It was the start of a big change in the way people talk about work hours and efficiency. Since then, Barnes and Lockhart have become leading voices in the movement for shorter work hours. They use their combined knowledge and strategic actions to help the group reach its mission and goals.

Andrew Barnes is an entrepreneur who has built a career around leading and changing companies in the UK, Australia, and New Zealand through market-changing innovations and digitizing industries. In 2018, he made news around the world with an idea he thought would make the workplace more productive and improve the health and happiness of his employees: a 4-day work week. Andrew launched a four-day week test through his company, Perpetual Guardian, which is New Zealand's biggest corporate trustee company. Each week, employees would get an extra day off with full pay. There is no doubt that the trial was a success. It garnered attention from around the world and won a number of foreign honors.

Barnes is now seen as the founder and leader of the worldwide drive toward a 4-day work week. His organization is now running the biggest trials ever. These are happening or concluded in the UK, US, Canada, South Africa, Ireland, Australia, New Zealand, Germany and Portugal. Over 100,000 employees from more than 250 businesses around the world are taking part in the trials to change their workplaces. These companies are working with a global research program that includes academics from top universities like Boston College, Cambridge, Oxford, and many more.

The co-founder of 4 Day Week Global, Charlotte Lockhart works to spread the word about the benefits of a shorter workweek and a focus on efficiency around

the world. She is on the board of the Oxford University Wellbeing Research Center because of this.

As part of her job, she helped to create the World Wellbeing Movement with other important global partners. Charlotte is also working with a number of national and regional governments to help come up with a fair way for the whole economy to switch to shorter work weeks.

She is a skilled public speaker who urges businesses to think about what they can change to become future workplaces that are ready for the 21st century and beyond. She was named one of the Future of Work 50 by Forbes magazine. She would like to change the way we work so that it's better and more inclusive for everyone and every economy. This is why Time named 4 Day Week Global one of the 100 most important companies of 2023.

Since starting 4 Day Week Global, Barnes and Lockhart have reached many important goals together. In 2019, they started a successful pilot program with several companies in different countries. This showed that the four-day work week plan could be used on a larger scale. By 2020, their attempts to promote a four-day work week had sparked the New Zealand government's interest in exploring it as part of its plan to recover the economy from COVID-19. In 2021, Spain stated that the government would support a trial of a four-day work week and then other governments like Belgium followed the path or started to be more interested. (Chapter 1). 2022 was the year where the most important pilots were

published and more countries, workers and companies were involved. This was in response to the growing global movement and research backed by 4 Day Week Global. Nowadays they claim from the official website that after the previous pilots the results are impressive with a 25% overall increase in revenues by the companies, a 32% decrease in employee resignations, 83% of companies found easier to attract talents, 66% of employees reported a reduction in burnout and in general 94% of companies want to continue after the trial. According to a poll by 4 Day Week Global,a four-day work week made 78% of workers happier and less stressed, and it also made companies 25% more productive.

The homepage put also in strong evidence that 2851 new years of free time were created so far.

They also explain how they can support these types of trials. It is possible to sign up to their Foundation course with access to tools, skills and resources given by experts and leader in this field in order to implement the shorter week in the most appropriate way. A consulting program is offered with one-on-one support to create the right business case with a tailored pilot program during every step of the process. The most important phase is the one when you can embark on a coordinated six-month trial alongside pioneering companies and supported by tools and experts.

5.2 Largest Pilot in UK

At the start of 2022, the 4 Day Week Campaign, 4 Day Week Global and Autonomy began recruiting companies and non-profit organisations to participate in a six-month trial. It represents the world's largest trial ever done involving 61 companies and around 2900 workers and it took place from June to December 2022.

The project was partially supported by the Barry Amiel & Norman Melburn Foundation. The qualitative strand of the project was partly supported by funding from the University of Cambridge, as well as the UK Economic and Social Research Council, as part of the Digital Futures at Work Research Centre (Digit). The social scientist that participated in the research and wrote the report are from the Autonomy Insitute, Boston College, University College Dublin, University of Salford and Vrije Universiteit Brussel. They were divided in two teams, one for the quantitative research and anoher one for the qualitative one.

Before going deeper with its analysis it is important to underline the key findings of this important research. Of the 61 companies that participated, 56 are continuing with the four-day week (92%), with 18 confirming the policy is a permanent change. The trial found that shorter working hours significantly improved employees' well-being, with 39% feeling less stressed and 71% experiencing reduced burnout levels. Work-life balance improved, with 54% finding it easier to balance work with family and social commitments. Additionally, 60% of employees found it easier to combine paid work with care responsibilities. However, the number of staff leaving companies decreased by 57%, and 15% of employees felt that the positive effects of a four-day week were worth more than the financial cost. Companies, which included a range of organisations from diverse sectors and sizes, were not required to rigidly deploy one particular type of working time reduction or four-day week, so long as pay was

maintained at 100% and employees had a ‘meaningful’ reduction in work time. each company designed a policy tailored to its particular industry, organisational challenges, departmental structures and work culture.

5.3 Methodology

The trial was designed with two months of preparation, including workshops, coaching, mentorship, and peer support. Experts in implementing four-day weeks and assisting firms in shifting to reduced working hours were also consulted. Participating organisations were asked to make a nominal gift to assist cover the costs of running the trials. In addition to preparation assistance, the trials provided research support undertaken by independent academic researchers from Boston College, the University of Cambridge, and Autonomy.

The study examined data from two sources: administrative data from corporations and survey data from employees. During the pre-trial phase, organizations filled out a 'onboarding' survey with basic information about themselves and submitted six months of data to be compared to data obtained during the six-month experiment.

Employee questionnaires were completed three times: immediately before the trial started (baseline), halfway through the trial (midpoint), and at the end of the study (endpoint). This separation of survey administration and employer is a key aspect of the research methodology: by promising employees that their responses are secret and will not be shared with their employers, it is possible to acquire honest and reliable data. Employee surveys at baseline and endpoint include questions about job experience, well-being, family, and personal life. The mid-point survey is substantially shorter, with only a few well-being items and a time diary that

asks respondents how they spent their most recent day off. Existing, academically validated scales were employed when available to assess well-being, employment situation, and other outcomes. In other circumstances, students developed their own questions. The UK pilot was the largest of its kind to involve interview research, and it can be viewed as a road map for future pilots to study further.

5.4 Partecipants

The marketing/advertising sector had the most participants, accounting for eight (18%) of the 61 organizations. Professional services are the second largest subset, accounting for seven (16%), with charities/nonprofits coming in third (11%). The companies operate in several fields, such as healthcare, arts and entertainment, retail, construction, and manufacturing.

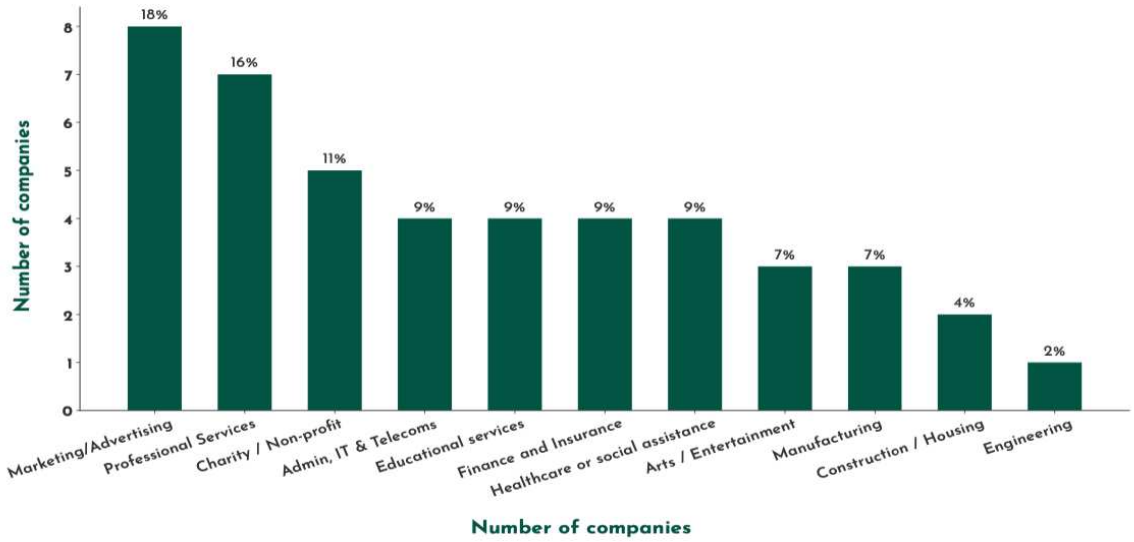


Figure 10, Details of partecipants, Source: THE UK’S 4DWG PILOT report, 2023

The group of firms is notable for its high concentration of small businesses. While the size distribution is considerable - one company employs around 1,000 people - 66% have 25 or fewer employees. 22% of organizations have 50 or more employees. In terms of cohort demographics, the sample's gender makeup is predominantly female, with 62% identifying as women, 37% as males, and 1% as 'Other'. The cohort's age distribution is quite even. Just over one-third (37%) of respondents are under the age of 35, 30% are between the ages of 35 and 44, and approximately 33% are 45 years or older.

68% of the sample holds at least an undergraduate degree. Executives and managers account for 18% of the sample, while 49% are professionals of some type. The most popular jobs are 'business and administrative professionals' (16%) and 'legal, social, and cultural professionals' (15%).

70% of employees in the sample are married or cohabiting, with roughly half (52%) having at least one child.

5.5 Which kind of 4 day week

Companies that wanted to be a part of the test were not forced to use a certain type of reduced work hours or four-day week. They were allowed to join as long as they kept pay at 100% and cut work hours by a "meaningful" amount. Instead

of thinking that a policy for a four-day workweek had to be "one size fits all," each company made its own policy that fit its business, organizational challenges, departmental structures, and work culture.

To give an idea of the different kinds of those adopted:

- Fifth day stoppage: The company shuts down operations for one additional day per week. This was a popular choice in companies where staff collaboration is more important than five-day coverage.
- Staggered: Staff take alternating days off: For example, the staff may be divided into two teams, with one team taking Mondays off, and the other taking Fridays off. This was a popular choice in companies where five-day coverage was important.
- Annualised: Staff work a 32 hour average working week, calculated on the scale of a year. For example the case of a restaurant with longer opening times in summer compensated by shorter opening times in winter
- Conditional: Staff entitlement to the four-day week is tied to ongoing performance monitoring. Seniors in the company may decide to temporarily suspend the four-day week for certain departments or individuals, if there is evidence that staff are failing to meet agreed performance targets. This may lead to uneven situations where some staff/departments are continuing to work five days over periods of time.

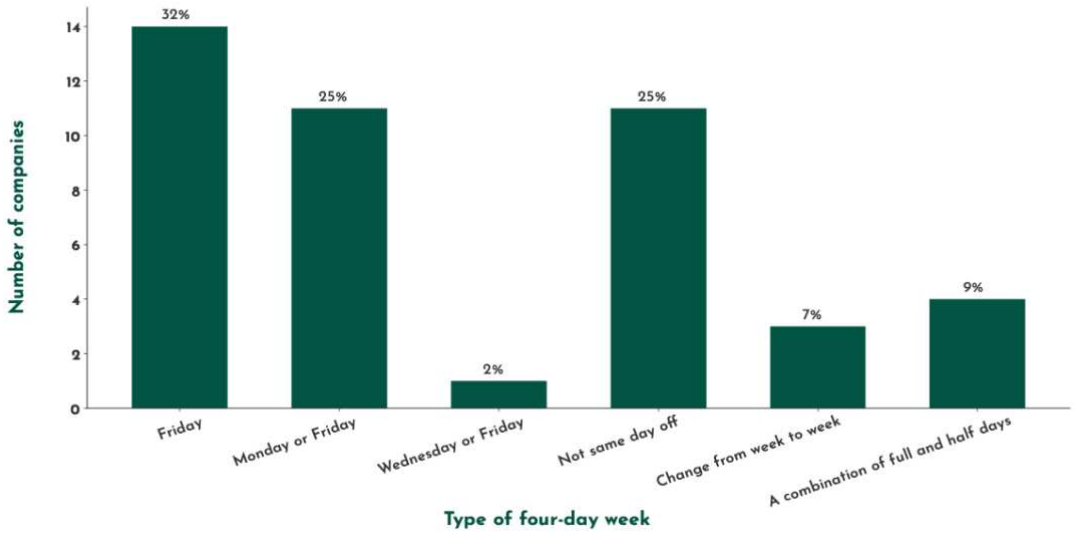


Figure 11, Source: THE UK'S 4DWG PILOT report, 2023

In the context of a short-term pilot study, it is unquestionably best practice for managers to advise their employees on the possibility that the four-day week may be subject to certain uncertainties as the company adjusts to new arrangements. Some firms allowed employees to reclaim work hours due to crises or contingencies on their day off. In this context, our interviews revealed various norms and rules in existence to protect the fifth day as a nonworking day. These can be loosely classified into three tiers: "Highly protected" if the fifth day had the same status as a Saturday or Sunday, "protected" if management expected personnel to be accessible in extraordinary cases, and "weakly protected" if the fifth day was more like the Conditional kind.

5.6 Company Data findings

The trial has been a success for the organizations. 56 of the 61 companies that participated have reported that they will continue to operate on a four-day workweek promptly following the pilot. The policy is permanent, according to 18 of these continuing companies.22. Two of the five individuals who are not continuing have chosen to extend their trials of reduced working hours. One of the individuals began the pilot phase late and is still in the process of adjusting to the new schedule, while the other is experimenting with a four-and-a-half-day workweek. For the time being, three additional organizations have suspended the four-day workweek.

The cohort's average rating of the trial was 8.3, with 0 representing a very negative experience and 10 representing a very positive experience on a scale of 0-10. Additionally, the vast majority of organizations were content with the preservation of productivity and business performance. The average score was 7.5 when the participants were questioned about the trial's impact on their company's overall performance. The average score was 7.5 in response to a query regarding the impact of the trial on the productivity of their company.

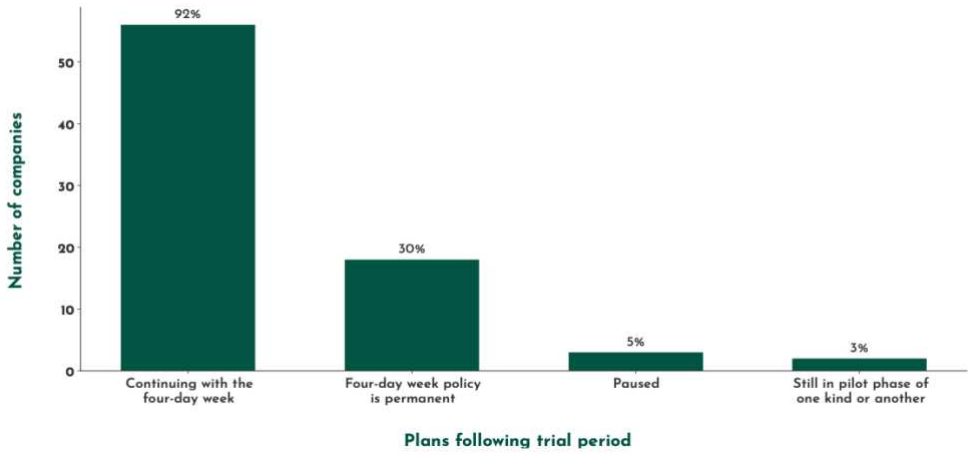


Figure 12, Choices adopted by companies after the pilot, Source: THE UK'S 4DWG PILOT report, 2023

The initial metric to evaluate the performance of the companies is revenue, which is potentially the most overarching performance metric. The 23 companies that provided adequate data over the course of six months were contrasted in terms of revenue from the conclusion of the trial to the commencement of the trial. The revenue from a prior comparison period was compared to that of the trial period for a distinct 24 organizations.

The results were weighted based on the size of the organizations to ensure that the very small companies did not have a significant impact.

The initial revenue measure is the straightforward change in revenue from the commencement to the conclusion of the trial. As a prominent figure, this remained

largely consistent, with an average increase of 1.4%, weighted by company size, among the 23 organizations that provided the data.

They then compared the change in revenue from an analogous, prior six-month period to the trial period. In this case, it is possible to observe a much larger increase of 35% on average.

The 34 organizations that provided this data experienced a weighted average decrease of only 1.3% in the number of employees, which remained essentially constant throughout the aforementioned period.

COMPANY METRICS: REVENUE AND NUMBER OF EMPLOYEES

Metric	Number of companies	Weighted change %
Revenue: % change from start of trial to endpoint	23	1.4
Revenue: % change from comparison to trial period	24	34.5
No. employees: % change from start of trial to endpoint	34	-1.3

Figure 13, Relationship between revenue and number of employees Source: THE UK'S 4DWG PILOT report, 2023

5.7 Employee data findings

5.7.1 Working time reductions

The trial had a big impact on the workplace, as shown by the report. As expected, the average number of hours worked each week went down from 38 to 34. This isn't a full drop to 32 hours, but it's because some companies are cutting hours by less than 8 hours (they usually start at more than 40 hours). In some places of work, people were still working on their days off. Still, there was a big drop of 4 hours of work on average over the course of the week.

Based on the number of people whose work hours went down (or up), 71% of the group said their hours went down, 15% said they worked more, and 13% said they didn't change. In the same way, the average number of days worked dropped from 4.86 to 4.52, which is about a third of a day. It looks like many workers worked four-day weeks, but sometimes they did small amounts of work on the fifth day. Other good news is that the amount of overtime worked decreased, both on average and for each employee. In fact, 34% of employees said they worked less extra. But 49% said that their extra hours had not changed. Also, the number of days people worked from home decreased slightly during the trial, going from an average of 2.88 days per week to 2.66 days per week, a 34% drop. This was true

even though more people said they worked from home at least some of the time at the end of the trial (9% increased their level of remote work compared to 6% decreasing it).

5.7.2 Health and well-being

They found that work stress decreased over the trial period. On a 1-5 scale from 'never' to 'all the time', the frequency of reported work stress declined on average from 3.07 before to 2.74 after the trial. While nearly 13% of employees did experience an increase in stress, three times as many (39%) were less stressed, with the remainder (48%) recording no change in stress levels.

Burnout also declined on average from a score of 2.8 to 2.34 (captured through a score amalgamated from 7 associated criteria ranked on a 1 to 5 frequency scale, capturing experiences of tiredness, exhaustion, frustration, and more). A significant 71% of employees reported lower levels of burnout, compared to only 22% who registered a higher burnout score.

Corresponding to the decreases in work stress and burnout, employees are more satisfied with their job, registering a significant average increase from 7.12 to 7.69 on a 0 to 10 scale, and with 48% of employees more satisfied than when they started.

These improvements in physical and mental health might dovetail with

the changes in fatigue and sleep that employees experienced. We found improvements in fatigue, with the average fatigue score falling from 2.56 to 2.12 (on a scale of 1-4, from never to daily), and 46% of employees reported a reduction in fatigue (with only 14% reporting an increase).

The prevalence of insomnia and general sleep problems declined significantly. 40% saw a reduction in sleep difficulties, whilst 45% saw no change and only 15% saw increases.

Positive changes also occurred at the intersection of paid work and family/ other parts of life. When asked about the ease of combining paid work with care responsibilities, the average score increased from 2.76 to 3.58 on a 1 ('very difficult') to 5 ('very easy') scale. 60% of employees reported that balancing care responsibilities had become easier.

Similarly, the experience of balancing employment with social life benefited, with an average reported increase from 2.9 to 3.78 (again with 1 as 'very difficult', and 5 as 'very easy'). In correspondence with these findings, conflicts between work and family time decreased: over the course of the trial 54% of employees found they were less likely to feel too tired to do household jobs following the trial (compared to 10% who felt they were more likely).

At the beginning of the trial, when asked how satisfied they are with their life (from 0 'not satisfied at all', to 10 'completely satisfied'), participants responded with an average of 6.69 out of 10. This measure had an almost full point increase,

to 7.56. Employees are also more satisfied with other domains of life, including household finances (44% reported an increase) and relationships (45% reported an increase). Most notably, employees recorded an increase in over two points regarding satisfaction with time, from 5.28 before the trial to 7.51 after. 73% said that they had greater satisfaction in this regard.

How did a four-day week affect gender equality in the household division of labour for our cohort? The rationale for many advocates is that with more free time available, men may spend greater time in housework or childcare, thereby narrowing the well-documented gender gap in unpaid domestic and care work. In the trial, the time men spent looking after children increased by more than double that of women (27% to 13%), but the share of housework between these two genders stayed almost exactly the same (68% reporting no change for men and women).

5.7.3 Changes and continuities

Initially, they questioned employees how their current work capacity compared to their lifetime best. Before the study started, the average self-rated ability was 7.06 on a scale of 0 to 10. At the end of the study, it had increased dramatically to 7.88. In short, respondents thought that the transition to a four-day week improved their

work performance. Overall, 55% of employees reported improved job performance.

There was also a reported increase in the rate of work. 62% of employees said their work tempo had risen, while 36% thought it had remained constant. However, while the pace of work may have increased, the majority of employees (78%) reported no significant increase in workload. Surprisingly, 52% of employees reported more leisure travel, while 44% indicated no change in this regard. 21% of employees reported a decrease in childcare expenditures, while 1% reported an increase.

Many things did not change, which is a positive conclusion in a variety of situations. The trial resulted in a tiny, weakly statistically significant increase in 'average' labor intensity (from 3.64 to 3.69 on a '1 to 5' scale), although reported differences were fairly evenly distributed across respondents. While slightly more than a third (36%) of employees reported an increase, nearly as many (31%) reported a decrease, and the remaining 33% reported no change in work intensity. On average, people's impression of complexity in their work did not increase, indicating another type of intensification. 42% of employees reported a rise in complexity, while another 42% had a drop, and the remaining 16% had no change. Another positive finding is that employees' perceptions of job security remained quite comparable throughout the study (a little decrease on average of 3.59 at the startpoint to 3.54 at the end, measured on a 4-point scale from

1,'extremely likely' to 4, 'not at all likely'). Similarly, there was a considerable decrease in the likelihood of people leaving their positions, with 30% less likely to do so at the end of the trial than at the start.

5.7.4 Conclusions for the trial

96% of the people interviewed said they would rather work four days. Then they asked them how much money they would get at their next job if they went back to a five-day plan. 46% (the first two groups) said they would take a five-day job with a 0–25% pay raise. A 26–50% rise would be needed for 29%. Only 8% said they'd go back to five days if they were paid more than 50% more. Another interesting fact is that 15% said they would not agree to a five-day plan, no matter how much money they were offered.

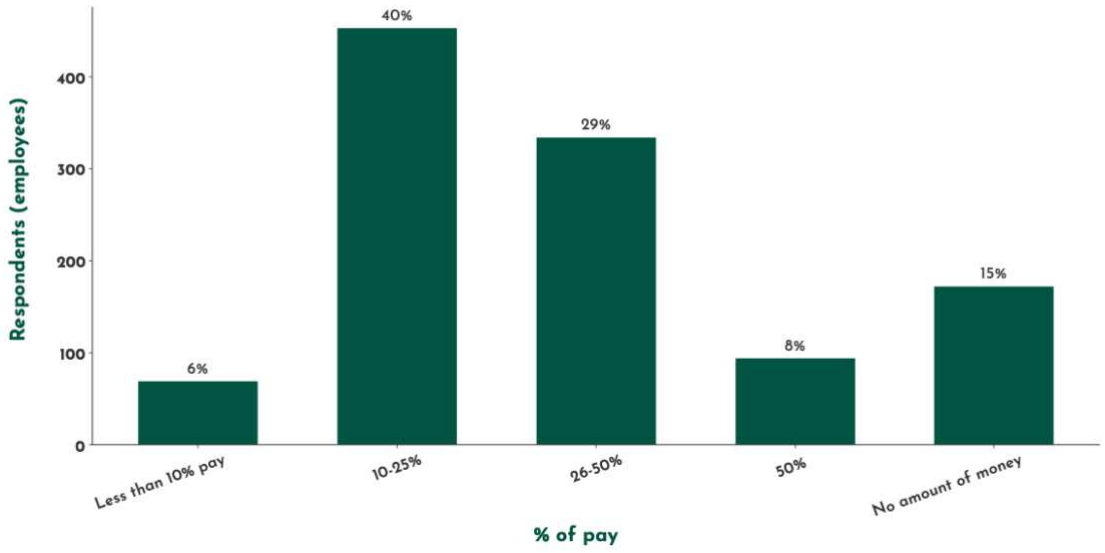


Figure 14, How much money to return to 5 days Source: THE UK'S 4DWG PILOT report, 2023

The report makes it very clear that these studies have had very good results. The leaders of companies have said that they are very happy with performance, productivity, and their general experience. This is also true for the employees themselves. For those who work it, the four-day week is just a popular schedule. By comparing "before and after" data for a lot of different metrics, we were able to find that a four-day week was good for everyone. When we looked at just the "business case," for example, we saw that income stayed about the same (adding a small 1.4% over the trial) and was 35% higher than the same time in 2021. At the same time, hiring, absences, and resignations all went down. At the end of the

trial, the employees were in a much better situation than they were at the beginning. They were less worried and burned out after working fewer hours, and their feedback also showed that their mental and physical health had improved, which may not have been a surprise since they spent more time exercising and felt less tired. As a result of working only four days a week, many workers said they were happier with their lives.

5.8 Long Term Report

Professor Juliet B. Schor, Professor Wen Fan, and Guolin Gu of Boston College worked with 4 Day Week Global to write a report in July 2023. Not only does it help us get information from many companies in the US and Canada about how fewer hours of work affect the North American market, but it also gives us a better idea of how the 4-day week will affect people in the long run, after the trials are over.

The usual pilot program for 4 Day Week Global lasts for six months, so up until now, it was only possible to give a short-term look at how less work time affects people. This new data compares how employees felt from the beginning (before the trial) to 12 months after the start of their 4-day work week. This is a much longer time period than the last one we used for comparison. All of the results are positive, and this new information helps to dispel worries that past successes were

due to novelty and couldn't last in the long run. There are responses from groups in the US, Canada, the UK, and Ireland.

Variable	Measure	Baseline	Trial endpoint from six month baseline	12 months from baseline	N [1]	Endpoint vs 12 months [2]
Work hours	Average number of hours worked per week	38.00	33.85	32.97	239	*
Work intensity	2 items: Working at very high speeds, working to tight deadlines, never to all the time (1-5)	3.35	3.36	3.28	379	*
Burnout	7 items: Exhaustion, frustration, "burnt out" from work, etc. never to always (1-5) over the past four weeks	2.77	2.25	2.30	379	*
Physical health	Self-rated, poor to excellent (1-5)	3.05	3.36	3.41	375	
Mental health	Self-rated, poor to excellent (1-5)	2.92	3.36	3.42	375	
Life satisfaction	Not satisfied at all to completely satisfied (0-10)	6.58	7.61	7.60	375	
Job satisfaction	Not satisfied at all to completely satisfied (0-10)	7.26	7.95	7.57	375	***
Work-life balance	Ability to combine paid work with social life: Very difficult to very easy (1-5)	2.93	3.86	3.97	375	*
Overall experience	Very bad to very good (0-10)	NA	9.05	8.87	419	Not significant, i.e. no change

Figure 15, Results for long term trial, Source: 4 Day Week Global, Boston College, Long term report 2023

The trial style was quite similar to that of the United Kingdom, and the sample was made up of 41 companies that participated in these pilot programs, which ran from February 2022 to April 2023.

The bulk of companies (32%) were based in the United States, with the remaining in Canada. The trial involved 988 persons, and 630 of them completed both the baseline and endpoint assessments.

The average number of hours worked per week continued to reduce after six months, bringing employees closer to the goal of 32 hours after a year.

Burnout levels climbed somewhat in the six months following the trial's conclusion, but the majority of the improvement was sustained. Life satisfaction remained steady, with no significant changes between the endpoint and the 12-month mark.

Participants reported an improvement in their ability to balance paid job and social activities. Scores rose dramatically from baseline to endpoint and improved throughout the year. People are still working more efficiently rather than rushing through the same tasks in four days instead of five.

Self-rated physical and mental health scores rose from baseline to trial end and continued to improve for another year.

Job satisfaction decreased slightly after 12 months but remained higher than the baseline level. This shows that the benefits of a four-day workweek on life satisfaction may be more firmly ingrained in people's total well-being than job

happiness alone. The overall experience with the four-day week remained very favorable, with an unchanged grade of 9/10.

Companies scored the trial's overall impact as 8.7/10 on a scale of 1-10 (extremely negative to very positive). Revenue increased by 15% during the trial, weighted according to firm size. Employees seriously considering leaving their employment decreased dramatically, with 32% saying they were now less likely to leave.

6-FOCUS ON ITALY

6.1 Institutional framework

The moment for talking about Italy has come and, continuing the research from the last important organization analyzed, the 4 Day Week Global it is possible to read from their sources that now something is moving on and the moment for their first official Pilot is coming. In fact, they are recruiting companies and manifestations of interest in order to start the first 6 months trials (anticipated by the periods of onboarding and planning) with three possible starting dates: 1 November 2024, 1 December 2024 and 1 January 2025.

Without their contribution for this country it is fundamental to understand why the 4 day week could be crucial in Italy, which companies and organizations are moving in this way and why it has not been adopted yet. It can be helpful to start whit some data:

Italy is at the bottom of Europe, with only 4% of workers feeling actively engaged in their companies (Jim Harter,Gallup, 2023).

For GoodHabitz (in a research in collaboration with Markteffect, 2023) one out of two people silently struggles with mental health issues related to their occupation, and 70% are dealing with stress and burnout.

Confindustria claims that the absenteeism rate stands at 6.4%.

The annual hours worked in Italy are 1,669, among the highest in Europe, with a productivity index of 103 (for comparison, Germany has 1,346 hours and a productivity index of 106) (OECD, Hours Worked, 2022).

According to a 2023 study by Assirm, an association that brings together Italian companies conducting market research, opinion polls, and social research, 55% of Italian workers prefer to earn less but have an extra day off.

For Assirm 55% of Italians are willing to earn less in exchange for an extra day off, and the percentage rises to as much as 62% among those aged 25 to 34.

According to Istat, in its report "Productivity Measures, 1995-2022," labor productivity decreases by 0.7% due to an increase in hours worked that is greater than the increase in added value. In short, we work a lot but produce little.

No national law in Italy provides norms for implementing shorter working week models. Mostly, the proposed bills come from the opposition parties – even though not in a united way.

The Avs (alliance composed by the Green party and the radical left) proposal calls for a "general reduction of working hours with equal pay," a measure that "would promote an increase in employment in certain productive sectors." The belief of the federation led by Nicola Fratoianni and Angelo Bonelli is indeed that there is "a clear relationship between reduced hours and higher employment rates." To that end, the identified solution is to reduce the weekly working hours to 34 effective hours while maintaining the same pay, and to simultaneously

establish a fund to encourage employers to decrease the weekly working hours by at least 10%.

The proposal from the Five Star Movement, whose first signatory is former Prime Minister Giuseppe Conte, instead provides for the guarantee of "a reduction in the total hours worked without compromising productivity." In this regard, the M5S believes that "comparatively more representative at the national level" trade union and employer organizations should be granted the authority to enter into specific agreements that provide for a reduction in weekly working hours while maintaining the same salary, down to a minimum of 32 hours, spread over the current working days or even over a minimum threshold of four days. For employers, the incentive planned on a trial basis for the first three years would be an exemption from the payment of social security and insurance contributions up to 8,000 euros annually.

The introduction of a four-day workweek is also included in the Democratic Party's bill proposal. What the Democrats propose is defined as "a measure to support collective bargaining that, while respecting the role of social partners, encourages the experimentation of solutions that simultaneously allow for increases in productivity and reductions in working hours, with equal pay." The incentive identified in this case for employers is the exemption of 30% of the total social security contributions owed (excluding premiums and those due to Inail)

for the trial period. The percentage would rise to 40% if the subject of the reduction is "arduous or strenuous work performances."

However, in the last few years some relevant companies introduced, tested or combined the 4 day week with other flexible and smartworking tools making possible for the audience, for competitors and smaller business to analyze these case studies. In some cases the companies that will be introduced in this chapter have already data-driven experiences with surveys, data and feedback while in others, the year 2024 and the first months of the following one will be very crucial in order to start to make conclusions, useful for them but also for the Italian context

6.2 *INTESA SANPAOLO*

One of the first companies to embark on this path was Intesa Sanpaolo, one of Italy's largest banking groups, formed through the merger of Banca Intesa and Sanpaolo IMI in 2007. Headquartered in Turin and Milan, it offers a wide range of financial services, including retail, corporate, and investment banking, as well as wealth management, serving millions of customers in Italy and internationally. The bank has introduced "a 4-day workweek of 9 hours each at the same pay" since January 2023, and in less than 6 months , it announced that it has reached an

"agreement with the unions on the new work organization," which was initially launched without an agreement between the social partners.

Intesa Sanpaolo has decided to change the working hours of some of its 74,000 Italian employees to "address the ongoing changes in the banking and financial sector by proposing solutions and tools, within the regulatory framework, that are cutting-edge in terms of work organization."

The goal, the company explains, is to "meet the needs of balancing the professional and personal lives of its employees and to show attention to their well-being." The changes, in fact, concern not only the so-called short week but also smart working.

The new organization, after the agreement with the unions, provides for the possibility of:

- voluntarily increase flexible work from home up to 120 days a year, with a meal voucher allowance of 4.5 euros per day;
- Working four days a week, voluntarily increasing daily hours to nine (the so-called 4×9), with equal pay, without a fixed day requirement, resulting in a reduction of weekly hours from 37.5 to a total of 36 hours.

"The possibility of working four days for more hours has been included in the banking contract for twenty years," explained Roberto Malano, a union representative from Intesa Sanpaolo for FISAC-CGIL, in an interview in mid-April.

"It's not a new thing:" It was intended to extend the opening hours of the branches or for special events, such as holidays. "In fact," he continued, "no company had really used it." The change brought about by Intesa Sanpaolo was to apply the regulation at an individual level. It's not the company that requests a shorter workweek, but the employee who expresses the desire to do it. "It really changes the concept."

Employees who wish to take advantage of the shortened workweek, in fact, the company explains, can "individually access these options" but only if it is compatible "with the company's technical, organizational, and production needs." And therefore, in fact, the worker must have every request for a shorter workweek approved by their supervisor, leaving a great deal of discretion to the latter. Furthermore, for employees of small branches who have the opportunity, the reduced workday must coincide with the branch's closing day, which falls between Tuesday, Wednesday, and Thursday.

The issue of branches is also central.

And she had been one of the reasons why the unions had broken off negotiations the previous year.

The new organization, in fact, concerned essentially only the headquarters and not the bank's branches, which number around 3,500. Now the new agreement

stipulates that the four-day workweek will also be possible in 40 large branches and, starting next November, for an initial trial in "over 250 small branches."
"We have outlined a path that will lead to the full involvement of all the workers in the group," declared Malano from CGIL to Sole 24 Ore after the announcement of the agreement.
Both the announcement of the new organizational model of Intesa Sanpaolo and the agreement now reached with the unions have sparked considerable interest from the media. "The attention on these experiments is high because the pandemic has left a strong sensitivity regarding work flexibility," comments Umberto Frigelli, director of the Research Center of AIDP, the Italian Association for Personnel Management.

A year after the introduction of the flexibility package, Intesa SanPaolo conducted a survey to gauge the opinions of its members on the new measures. If the economic indicators, with record profits, although driven by still high rates, clearly reflect the results achieved, the assessment of the workers, shared with the unions (Fabi, First, Fisac, Uilca, and Unisin), clearly indicates what they think about the new work organization brought about by the flexibility package.
The Chief People & Culture Officer of the bank, Roberto Cascella, explains that "more than a year after the introduction of the shorter workweek, flexible hours, and the extension of smart working, we wanted to listen to our people." The

questionnaire was distributed to nearly 70,000 Italian workers and was fully completed by 56.2% of them, just over 39,000. As a result the overall vision of the new work organization is positive: 92% consider it innovative, 87% believe it has improved the image that colleagues have of Intesa Sanpaolo, and 83% think it has helped reconcile work-life balance.

In the general appreciation of the flexibility package by workers, there are still some aspects to improve, especially in the branches where an experiment is underway involving 40 large branches and 250 small ones. It's not surprising then that a different perception emerges between those who work at the front desk (less positive) and those who work in the central offices and divisions of the group (more positive).

The main problem of the four-day workweek, according to 40% of workers, is the excessive extension of working hours on the other four days. However, in the end, even in this case, 99% of those who use it declare that they will continue to do so.

6.3 LUXOTTICA

Luxottica is an Italian eyewear company founded in 1961, renowned as the world's largest eyewear manufacturer. Headquartered in Milan, it designs, manufactures, and distributes a variety of eyewear brands, including Ray-Ban,

Oakley, and Persol, and operates retail chains such as Sunglass Hut and LensCrafters. In 2018, Luxottica merged with French company Essilor to form EssilorLuxottica, a global leader in optical products.

The firm has launched a four-day workweek starting from April 1st and continuing until the end of 2024. It is an experiment involving 600 employees distributed between the headquarters in Agordo and the offices in Sedico and Cencenighe (Belluno), Pederobba (Treviso), Rovereto (Trento), and Lauriano. (Torino). 600 employees out of a total of about 15,000. This refers to about 4% of Luxottica's workforce. At the end of the year, after taking stock, the company will decide whether to confirm the measure, extend it to a larger percentage of workers, or revoke it.

The agreement between the leading company in the production and trade of eyewear and the employees consists of 20 short weeks of 4 days throughout the year, with shifts from Monday to Thursday. The short week will entitle you to the same salary. The employees, for their part, will have to give up 5 days of leave. Another 15 permits will be the responsibility of Luxottica.

The experimentation was not open to everyone: In this evaluation phase, all operational roles whose absence for one day a week would negatively impact production continuity have been excluded. A short week is therefore ruled out in 2024 for about 5,000 employees, including mainly logistics staff, equipment operators, maintenance workers, team leaders, and personnel based in the Milan

office. Among the other 10,000 eligible, about 1,000 applied, mostly young people and old ones. At first look at the lists of applicants, it seems to me that the presence of female workers, the figures from whom a greater need for work-life balance is expected, is lower than that of young and older employees. Milena Cesca, secretary of the Femca Cisl of Belluno Treviso, stated that "as always, when it comes to trials, there are those who dive right in and those who prefer to wait and see what happens." The decision not to submit the application, for example, can simply be linked to the fear of being moved to an area different from one's own where the shorter workweek is more feasible, thus carrying the risk of having to reassess established habits.

At the end of 2014 it will be possible for the management of the company to analyze the trial, to make corrections and take further decisions.

6.4 LAMBORGHINI

Lamborghini is an Italian luxury sports car manufacturer, founded in 1963 by Ferruccio Lamborghini. Known for its high-performance, stylish, and often exotic supercars, Lamborghini has become a symbol of automotive excellence and innovation. The company is headquartered in Sant'Agata Bolognese, Italy, and is a subsidiary of the Volkswagen Group through its Audi division.

On the night of December 4th to 5th in 2023, the draft agreement between the union representatives (rsu), Fiom, Fim, and Automobili Lamborghini for the company's supplementary contract was finalized, after a year of negotiations. The unions emphasize that an "important milestone" has been reached with the agreement, achieving a shorter workweek. Regarding the details, a reduction in working hours is expected, an increase in annual salary, the hiring of 500 new employees, a path for improvement in ongoing site contracts, the consolidation of rights, and the protection of differences.

The agreement reached at Lamborghini is considered historic as it marks the first time that an automotive industry in Europe implements a significant reduction in working hours, without decreasing salaries but rather increasing them.

The reduction of working hours will be implemented through a rotation system, which includes the following scheme: A five-day work week followed by a four-day week for production staff or related personnel operating in two shifts (morning and afternoon) and a central shift, resulting in a total reduction of 22 working days per year. For production personnel or those connected to it who operate on a three-shift system (morning, afternoon, and night), there will be one week of 5 days followed by two weeks of 4 days, resulting in a total reduction of 31 working days per year. For the production-related staff, a reduction of 16 working days per year is anticipated, while for the office staff, it will be 12 days

less, with the possibility of benefiting from up to 12 days of smart working per month.

The management of schedules will be reviewed by using longer shifts or adjusting individual leave. Essentially, the aim is to maintain the same number of hours worked while spending less time within the company. "That's precisely why," concludes the CEO Winkelmann, "to summarize everything with the expression 'short week' is incorrect."

This measure does not seem to be a trial like the one of Luxottica, of course some reflections and considerations will be made at the end of the first year, but it appears like a permanent change in the company’s organization.

Claudio Domenicali, CEO of Ducati, a company not only part of the Volkswagen group but directly controlled by Lamborghini claimed: "I don't believe we will absolutely go in the same direction," . "I believe, rather, that it is a wrong path that leads to a reduction in competitiveness."

"When brands are boutiques that create extraordinarily luxurious items like Lamborghini, perhaps they can afford it," Domenicali added, "but I believe that if the entire production sector were to head in that direction, it would be a problem for workers, leading to a loss of competitiveness and a reduction in jobs."

According to Domenicali's estimates, operations like those developed by Lamborghini risk increasing labor costs "by as much as 20%" and could

exacerbate the desertification of the production system, particularly in the automotive sector.

6.5 MAGISTER GROUP

Magister Group is an Italian company specializing in industrial and technological solutions, particularly in the areas of energy, infrastructure, and telecommunications. Known for its innovation and expertise, the company provides a wide range of services including engineering, construction, and maintenance, with a focus on sustainable and efficient solutions for global markets.

Thanks to a trial agreement, starting from March 1, 2023, all employees of Magister Group have begun a shortened workweek: four working days at the same salary. A 20% reduction in working hours, with the same pay.

The monitoring has been entrusted to the SDA Bocconi School of Management. Rossella Cappetta, associate dean of open programs at Sda Bocconi and professor of work organization, and Maurizio Del Conte, professor of labor law, conducted this year-long research.

The choice of the day off is negotiated between the employee and the manager, balancing organizational and personal needs. Not everyone preferred Friday or Monday, which allow for an extended weekend. Someone appreciated Wednesday, to take a break in the middle of the week. "The branch manager, with the help of headquarters, took care of establishing the shifts, trying to meet the needs of the workers," explains Del Conte. "The support from the headquarters has been crucial from an organizational standpoint, as not all branches, often small in size, had the capacity to manage these planning issues."

Cappetta recalls that "Magister Group started the four-day work week on March 1, 2023, and after four months we administered a questionnaire to all employees, using scientifically validated scales, related to three types of variables: work (for example, the degree of autonomy), social (for example, the intensity of relationships with colleagues), and individual." (for example, satisfaction rate). The same type of instrument was also used in February 2024 to continue monitoring. Before distributing the questionnaire, we conducted a qualitative analysis, with a month and a half of observation within the branches, gathering both enthusiasm and issues. When we met the workers in person, the language was positive: "They expressed satisfaction with the short week."

In parallel, the Bocconi team has monitored the economic data of the entire company and that of the various branches, focusing particularly on sales. "One of the key performance indicators of the company is the number of customer visits,"

says Del Conte. "It could be feared that, since employees worked four days instead of five, this figure might decrease." So we kept track of all this information: "On one hand, the perceptual data of satisfaction, on the other, the economic data."

The evaluation revealed that in Magister Group the short workweek has been successful, as the perceptual data shows almost all improvements (even a year after the launch of the trial, people express enthusiasm and are more satisfied) and, at the same time, the economic data has remained stable. In some cases, there has even been a slight increase. It can be inferred that there has been a net increase in productivity. Despite employees working 20% less, the company is not spending more, has not had to hire additional staff, but it turns out that people have organized their work better.

The organizational intervention, along with the reduction of working hours, has yielded positive results. "But it must also be said that the experiment, in our opinion, needs to be monitored again at 18 and 24 months, because behaviors settle during this time frame."

In 12 months, however, the employees have at least learned to take an extra day off, Cappetta continues. "In the first period, for example, some people still passed by the office; they systematically kept in touch." So we found that taking days off helps you learn. The December survey showed that, compared to July, people

were taking more time off, working only when necessary, in response to specific urgencies.

The study also highlighted that seniors adapted better to the shorter workweek compared to the young, who felt greater pressure due to their lack of experience. Theirs is the category that, during their day off, went to the office most often, because they couldn't immediately organize themselves to complete in four days the work of five. The over 50s, on the other hand, learned sooner.

6.6 SACE

SACE, the Italian insurance and financial entity controlled by the Ministry of Economy and Finance, plays a key role in supporting Italian businesses, particularly those that export and seek to expand into international markets. Founded in 1977, the SACE group is committed to supporting companies, especially small and medium-sized enterprises (SMEs), in their growth both in Italy and in over 200 countries around the world. Its global network includes 14 offices in Italy and 13 international offices in cities such as Hong Kong, Mumbai, and Dubai, with a portfolio of insured operations and guaranteed investments amounting to 164 billion euros.

The first days of the year 2024 marks a milestone for the Italian public sector, in fact Sace stands out as the first Italian company owned by the State to experiment

with a four-day workweek. This initiative could mark the beginning of a true revolution in the world of work, not only for the public sector but also as a model for the private sector.

The company does not limit itself to reducing the workweek to four days while maintaining 36 working hours offering the same wage. It goes further, eliminating clocking-in controls and offering unprecedented flexibility for remote work. Employees can freely choose their day off, planning it monthly based on the team's needs. This approach not only improves the work-life balance but also encourages a more autonomous and trust-based work culture.

The effectiveness of this experimentation will not be left to chance. The Smart Working Observatory of the School of Management at the Politecnico di Milano will be responsible for assessing the impact of these innovative measures with an important partnership rapresented by Microsoft. They will analyze various aspects, such as productivity, employee satisfaction, and the impact on the national economic fabric.

7- PILOTS REVIEWED BY LITERATURE

7.1 MAIN LIMITATIONS OF CURRENT PILOTS

The preceding chapters have provided a comprehensive presentation of data, positive feedback, and a variety of case studies that demonstrate the effectiveness

and successes observed in the subject matter. As the discussion moves into the final section, the focus will shift to a critical examination of the research. This part will address the limitations inherent in the methodologies and findings, offer explanations for any discrepancies or unexpected outcomes, and explore critical perspectives that challenge the assumptions and biases that may have influenced the results. Additionally, this section will highlight areas where improvements can be made, identifying potential directions for refining and enhancing future work. This approach aims to present a balanced and thorough analysis, acknowledging both the strengths and the challenges associated with the topic.

7.1.1 *Addressing casuality*

Pilots are used to investigate cause-and-effect relationships by posing a causal question, such as the impact of a four-day week on various outcomes like productivity, work-life balance, and workers' performance. Establishing causality is a major challenge in social science research, as it requires creating a valid counterfactual to demonstrate what would have happened without the program. (Hill et al., 2021) There are various experimental and quasi-experimental strategies available to assess causality, each with its strengths and limitations. Non-experimental estimations are generally considered weaker for addressing causality due to the tendency of their underlying assumptions to be violated.

(Angrist & Pischke, 2010) Two common non-experimental evaluation methods are pre-post comparisons and self-selected comparisons, which have been shown to yield unreliable estimates of the counterfactual due to selection bias and omitted variable bias. (Gertler et al., 2016) Most evaluations and academic experts consider the use of these methods to be highly risky.

All private-sector pilots mentioned in this working paper employ before-and-after comparisons, with only one exception using a more robust evaluation method.

The validity of the before-and-after comparison approach hinges on the assumption that other changes in the outcome of interest over time are not expected to be influential, which is highly unlikely in this scenario.

As it is possible to notice from the following table, all variables went up in a way that was statistically significant in the four months before the test started, from November 2017 to February 2018, which is when the baseline data was gathered. There have been some changes that are even bigger than the rise from February to May 2018, which was the intervention time.

This unusual event probably means that there were other factors that affected the research and skewed the results of the before-and-after tests.

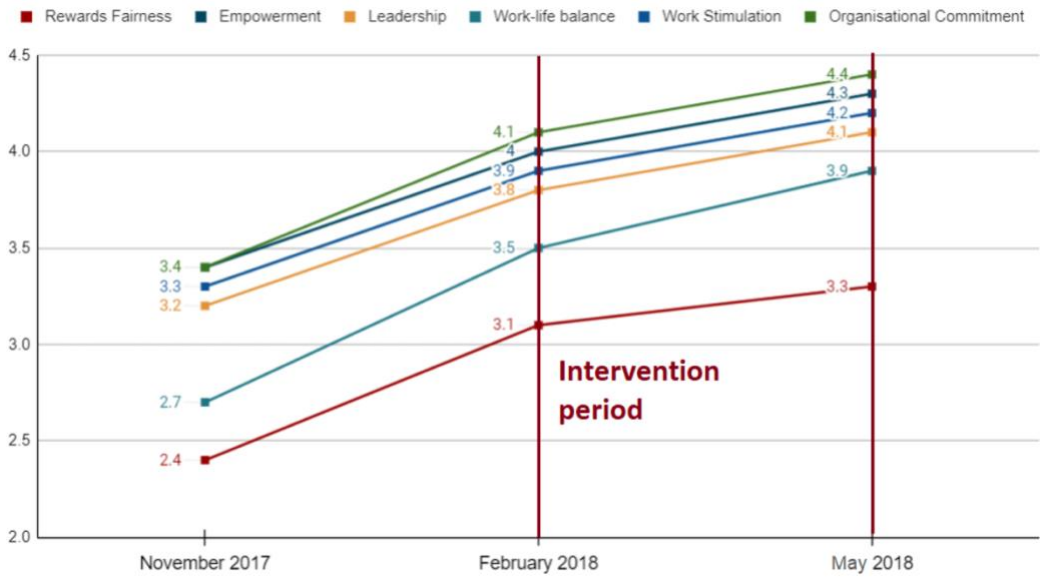


Figure 16, Survey before and during Perpetual Guardian trial, Source: Cuello, H. based on data from Haar, J. (2018),

Another important reflection is given that different workplaces were used at different times as part of the treatment and comparison groups in the Iceland tests. The pilot in Reykjavik used at least one workplace as a control, and the test run by the Icelandic government used at least four workplaces as a control. But if the groups aren't picked at random, both groups are likely to be very different from each other at the start in ways that can be seen and things that can't be seen.
This creates big issues with endogeneity and a major threat to the Iceland pilots' internal validity, since the comparison may be very skewed because the groups were different before the intervention. For example, treated workplaces might

have more motivated public sector workers who work better as a team and have better management methods, which would make the comparison less fair.

7.1.2 *Collect accurate data*

The current private and public sector pilots rely on self-reported survey data, which can be vulnerable to biases and reporting errors. This can lead to inaccurate reporting of changes or biased views of experiences due to factors such as the Hawthorne effect, social desirability bias, and the use of retrospective questions. To address these limitations, some pilots have included separate perceptions from managers or supervisors to compare with employees. However, the small sample size limits its quantitative validity.

Ideally, survey-based data should be supplemented with administrative data to provide a more comprehensive picture. The 4DWG pilots have incorporated company data, such as revenue, average and total hours worked, resignations, new hires, and sick and personal days taken, but this approach was limited by a small sample size. Additionally, the data was weighted and statistical significance was not always reported.

Performance indicators in the Icelandic trials lack sufficient information on most outcomes, with a mix of quantitative and qualitative data presented without clear reporting of the origin of the data and the effect sizes. Matching impact measures

with programmed objectives is essential, and some pilots adopt more valid and reliable survey questions in certain areas than others.

When analyzing the productivity impact of private-sector pilots, it is important to consider the challenges of identifying valid productivity indicators that are comparable across different businesses and time periods. Additionally, seasonal variations can significantly influence productivity data, which can be problematic when conducting short-term pilots and making before-and-after comparisons. To address these issues, it is important to encourage participating businesses to collect productivity data in a standardized and comparable manner from the beginning of the pilot.

In conclusion, the current pilots in the private and public sectors face several limitations, including the potential for biases, inaccuracies, and the need for standardized and comparable data collection.

7.1.3 *Transparency of reported results*

Openness and transparency are crucial tenets in the scientific community, as research integrity relies on reproducibility. However, current research practices often deviate from these standards, leading to misleading findings. Four-day week

pilot studies, conducted by governments and advocacy organizations, are not held to the same rigorous reporting standards as academic research, which can result in issues such as p-hacking, cherry-picking, and data dredging. (Christensen & Miguel, 2018)

Some pilots, like those conducted in Iceland and the company data of 4DWG, do not consistently report basic statistical information on the results, such as the statistical significance of the estimation. This may lead to some positive results being caused by random sampling error, which is not always acknowledged or addressed.

Statistical significance needs to be better reported and discussed, such as providing confidence intervals, standard errors, and standard deviations to give a more complete and precise picture of the magnitude and direction of the effect. Limited statistical information provided may underestimate the credibility of the evaluations, as seen in the Iceland pilots' lack of balance check or descriptive statistics.

The organisations and governments coordinating and running the pilots did not share any pre-analysis or pre-registration plan, which could have led to reporting only those results that had positive effects, leaving several unreported outcomes of interest that did not show the expected results.

In general, pilots only report a few non-positive results, and when they do, authors tend to claim that the result was expected. However, this cannot be verified, and arguments sometimes indicate confirmation bias. (Haar, 2018)

In addition, pilots only include a few robustness checks, such as estimating two variables that should not be influenced by the four-day week. However, it would be crucial to include higher-quality checks to avoid omitted variable bias.
When reporting summarised findings in a digestible format, it is crucial to be transparent and avoid cherry-picking results and changing estimations. For example, the main website providing general information about the Perpetual Guardian pilot results has some confusing information, misleading most media to report a 45% increase in work-life balance when the results reported using the baseline are closer to an 11% increase.

7.1.4 *Characteristics of the samples*

What makes up a pilot study's sample size and other features are very important for its internal validity, outward validity, and ability to be used in other situations. Small sample numbers can make the data more variable, the statistical power lower, and it harder to control for variables that can throw off the results. They can also hurt external validity if the group isn't diverse and true to life. (Cuello,

2023) In the private sector, most pilots have been honest about not being representative. However, it might still be helpful to run pilots with more motivated businesses to see what happens in the best-case situation.

The Perpetual Guardian pilot gave useful information about how representative the group was. For example, the people who took part were happier with their jobs, more engaged, and more likely to stay in their jobs than the average New Zealand worker before the pilot started. But the 4DWG projects have given a lot of information about the companies that took part, but they are not very representative because they only looked at companies in the IT, telecoms, and professional services sectors.

Because pilots mostly use qualitative data, small sample sizes also make it hard to do a thorough study of the four-day week's varied effects. Take-up, completion rates, and attrition rates all affect the actual sample numbers. However, non-respondents and their effects are rarely analyzed and talked about in detail. Because survey responses are usually only about half of what was expected, sampling bias can make the data less useful for other situations. Finally, the sample size is very important when planning a study, and it needs to be big enough to give accurate and useful results.

When figuring out how general the results of "four-day week" pilots are, things like the involvement and the design of the pilots should be taken into account.

Working four days a week and having one day off might not have the same effect as working 32 hours. The starting point and number of hours worked are very important. To make sure the pilot design works well, the typology described in this working paper should be followed based on the type of company.

Private businesses work in different ways, and how important output is to them may have a big impact on how well the four-day week works. Even in the private sector, results from one industry or business size can't be applied to all firms because they operate in different ways, have different organizational structures, and have limited resources.

Pilots have given very different amounts of information about the costs of switching to a four-day week, and these costs have not been properly discussed. Businesses that are taking part in most pilots have been given training and mentoring, but they haven't been told how much the training costs or how much the business is paying in order to switch to a four-day week.

The pilots' scalability can't be fully analyzed because it is not possible to knowhow much they cost or how they relate to other relevant policy options. Policymakers need to know how much an action will cost in order to decide if it is affordable and if it will last. Policymakers might not be able to decide if the intervention is worth the money if they don't have correct cost information.

7.2 Room for improvement

In his working paper for the European Commission in 2023, Hugo Cuello gives ten suggestions on how future researchers and policymakers can improve the quantitative study of pilots with a four-day work week. It talks about the main methodological problems that come up when you try to do a quantitative evaluation of these systems. As a general rule, the suggestions are meant to make planning and judging future four-day week pilots easier. Researchers and lawmakers can make sure that future pilots give more useful information by following these suggestions. This will increase the body of evidence and help people make better decisions about the effects of four-day week policies. But it's not likely that relying on just one pilot study would give you all the knowledge you need to make smart choices about how the four-day workweek might affect things. Many pilots should be done so that the solution can be improved over time and flaws can be found.

It is important to plan a strong evaluation method during the planning stage of a four-day week pilot study to make sure that it is valid and reliable. This is done by comparing the programmed group to a similar group that did not take part in the program. This creates a stronger counterfactual that can effectively handle causality. A trial plan should be made so that there are clear rules for choosing participants and gathering data. This will lower the chance of bias and make sure that the data is of high quality.

When judging how well a program works, it's important to choose a good comparison group. When people volunteer workspaces or businesses based on performance or other selection factors, a method called "rolling basis selection" may produce unfair results. The easiest and most effective way to avoid selection bias is to pick workplaces or businesses at random at the start of the program. If randomization isn't possible, a quasi-experimental approach should be used that takes into account traits that can't be seen and gives enough data to prove assumptions.

To make sure that four-day week research studies are trustworthy, it is important to give people clear access to data and information. This includes detailed reports that show a more in-depth look at the data and how the results were interpreted, as well as a list of all the results and conditions of the program's execution. The use of summaries and policy briefs in easier-to-read forms shouldn't lower the quality of the information. This is especially true when it comes to not changing estimates or picking and choosing results.

In addition to being open and honest, it is important to follow the rules and standards for scholarly reporting. This includes giving a clear explanation of the evaluation method and estimates used to look at the data, reporting the sample's

descriptive statistics, doing a balance check of the groups, and talking about the research's limitations and uncertainties, such as possible sources of bias.
To make sure that four-day week pilot studies are reliable and trustworthy, you should agree on a set of results ahead of time and tell them. Results should be timely, relevant, clear, and unambiguous, and they should fit the goals of the program. This will lower the chance of picking and choosing which results to use. The pre-analysis plan should be open to everyone, and any changes that are made to it should be clearly stated and explained.

To sum up, to make sure that four-day week pilot studies are valid and trustworthy, they need to plan a strong evaluation method, choose a valid comparison group, make data access clear, and agree to specific outcomes.
The effectiveness of a four-day workweek can be greatly affected by several things, such as the sample size, the number of people, and the type of intervention used. Pilot studies with small sample sizes may not be as true on the inside or the outside, which can make it hard to find important differences and prove statistical significance. To build trust, pilots should try to use a sample that is similar to the target community as a whole and take steps to increase enrollment and decrease dropout rates.

Pilots should also deal with people who don't follow the rules to make sure the results are accurate. A thorough look at the people who didn't reply can help avoid bias and give a fuller picture of the different effects of the four-day week. When you look at the numbers, you should think about things like the take-up rate, the completion rate, and the attrition rate, because they can have a big impact on the end results. Looking at people who don't follow the rules can also help you figure out what might be stopping you from implementing the four-day week and how to get more people to take part in future studies.

To get a fuller picture of how the four-day work week affects output, it is important to look at more than just self-reported surveys. For example, you could look at company data on revenue, average hours worked, resignations, new hires, and sick and personal days taken. As soon as a business decides to take part in the pilot, project managers should tell them to start collecting data in the same way.

Longer pilots or more time for research can help make sure that changes in management and business results have long-lasting effects. By running longer pilots, we would be able to look at a wider range of effects and learn more about how the four-day week affects work performance, productivity, and other important results for various groups.

Lastly, lawmakers need to think about whether the intervention can be used on a larger scale after the pilot phase. This means giving a thorough evaluation of the intervention and the traits of the target group in order to figure out who it works for and when. This will make it more likely that higher levels of compliance and more representative samples will be obtained in future studies, which will eventually make the results more general and useful.

7.3 Biggest Question Points

According to Anthony Veal of the University of Technology Sydney (2023), one of the researchers that analyzed better the recent pilots' reports, four points are still unanswered, and they help to summarize the main critical aspects about this topic.

The first one consists of that, at the beginning, in the middle, and at the end of the six-month trials, both employers and workers were polled. But only about half of the workers and two-thirds of the managers made it through the last, very important round. So there is some doubt about how representative they are.

After that the second doubt is about the large increase in efficiency, where companies claimed to record an increase of almost 20% in output per employee per hour worked.

Reading the reports, the companies were only asked to give information on their income, not their "output." This could be a good replacement. But price changes may have had an effect as well (inflation was on the rise in 2022).

Third, how did the firms that said they increased output actually do it? And can it be kept up?

People who support the four-day week say that workers are more creative because they can focus on their work and ignore other things that might distract them. A lot more time than six months are needed to find out if this more intense work schedule is realistic.

The fourth and last is the most important question, and the answer will only come out over time. The organizations that took part in the tests chose to be there and don't really reflect the business as a whole. They mostly hired people to work in offices. A little over four fifths worked as managers, professionals, IT workers, or secretaries. Organizations in other fields, with workers who have different job profiles, may find it hard to copy the higher productivity that comes from working harder.

For example, only three companies from the manufacturing sector were part of the big UK trial. Since manufacturing has been the subject of efficiency studies and investments in ways to save labor for at least a hundred years, it doesn't seem likely that there will be a 20% "efficiency gain" generally.

Finally, there are fields that help people in person, usually seven days a week. There is no way for them to stop for a day, and health and safety issues often limit how hard they work. Individual production gains probably won't be enough to make up for fewer hours worked. Either employees will have to work extra hours or more people will have to be hired in order to keep the business open.
So that, companies would face huge hiring costs, taking the decision to not embrace the shorter week, leading to more inequalities among workers from different fields and sectors.

CONCLUSION

The idea of the four-day workweek is fast attracting interest as a possible answer to the changing needs of the modern worker. This thesis has investigated the subject holistically, exploring its historical evolution, theoretical foundations, and pragmatic uses in several settings. Although the concept offers a convincing substitute for the conventional five-day workweek, the final effect of this change is yet unknown, thus the next few years will be crucial in deciding whether this change is feasible and sustainable over long run.
The responses of important stakeholders—businesses, governments, institutions, and workers—will be crucial in determining the direction of employment as these

pilots keep being evaluated and improved. Companies who adopt the four-day workweek could find themselves leading a major change and maybe earning a competitive edge in terms of talent attraction, employee well-being improvement, and production increase. This change does, however, also provide difficulties since not every sector or business could be equally fit for such a paradigm. The next years will show which companies can effectively adopt this new approach and which may struggle, therefore reconfiguring the dynamics of the market and the corporate strategies.

It's important to note the role that organizations and governments play in this change. The four-day workweek will need to be pushed by policymakers, but they will also need to be controlled as it grows. To do this, they must keep track of the results of different studies, figure out how they affect the economy, and make sure that labor laws and rules are updated to fit new work plans. It will depend a lot on how governments and businesses react to the four-day workweek to see if it can spread from trials to everyday life. Their decisions will have an impact on regulations, and they may also mark the start of a new era in worker relations. Changes in people's habits and preferences as they get used to working only four days a week will also be quite important. Most of what will be used to judge the success of this plan is how it affects mental health, work-life balance, and quality of life in general. As employees experience the pros and cons of a shorter

workweek, their tastes and expectations may change. This could influence societal norms and labor market patterns as a whole. These changes may make people rethink what a good and satisfying work-life balance is, and they may also lead to more creative ways of managing and organizing work.

The idea of a four-day workweek is very appealing, but this thesis doesn't try to make it the only way to change the way people work. Instead, the objective has been to look into the subject in its entirety, weighing its pros and cons. The historical background, theory models, and real-life examples of the shorter workweek are all looked at in this thesis to give a fair analysis of an idea that is still being tested but is already doable for many.

As society fights to keep up with the demands of modern work, the four-day workweek gives us a chance to question what we think we know and investigate new ways to boost both output and quality of life. Still, the outcome will depend on how well companies, governments, institutions, and workers do in the situation. It will be very important over the next few years to see if the four-day workweek can go from being an experimental idea to a common way of working that changes the future of work for the better. This thesis gives us information that will be useful as the discussion about the four-day workweek grows. This will help us understand how complicated this change is.

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