

INSTITUTO UNIVERSITÁRIO DE LISBOA

Beyond the Five-Day Paradigm: Assessing the Four-day Workweek Revolution
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## BUSINESS SCHOOL

Department of Marketing, Operation and Management
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**Abstract** 

There is still a lot to discover about the current campaigns to replace the five-day workweek

with a four-day timetable, even if employers, political parties, governments, and the media

have all expressed interest in them. This study attempts to understand the possibility of

implementing the four-day workweek and the pros and cons of it. Based on a sample of 20

workers, more than half of whom held positions connected to managing a team, this study

uses qualitative analyses aligned with the KH Coder to figure out if the four-day workweek is

a viable option. The results reflected what was highlighted in the literature review, where the

majority believes in a successful implementation. It must be noted that according to the

results, the interviewees were irreducible to a salary reduction. Nonetheless, this research

suggests that some benefits, like productivity, should not be prioritized over other significant

issues, such as mental health.

**Keywords** 

working hours, four-day workweek, implementation, productivity

**JEL Classification** 

I31, M12

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Resumo

Ainda há muito por descobrir sobre as atuais campanhas de substituição da semana de

trabalho de cinco dias por um horário de quatro dias, apesar de empregadores, partidos

políticos, governos e meios de comunicação social terem manifestado interesse nas mesmas.

Este estudo procura compreender a possibilidade de implementar a semana de trabalho de

quatro dias e os seus prós e contras. Com base numa amostra de 20 trabalhadores, mais de

metade dos quais ocupavam cargos ligados à gestão de uma equipa, este estudo utiliza

análises qualitativas alinhadas com o KH Coder, para perceber se a semana de trabalho de

quatro dias é uma opção viável. Os resultados refletem o que foi destacado na revisão da

literatura, em que a maioria acredita no sucesso da implementação. É de salientar que, de

acordo com os resultados, os entrevistados foram irredutíveis a uma redução salarial. No

entanto, esta pesquisa sugere que alguns beneficios, como a produtividade, não devem ser

priorizados em detrimento de outras questões importantes, como a saúde mental.

Palavras-chave

horário de trabalho, semana de trabalho de quatro dias, implementação, produtividade

Classificação JEL

I31, M12

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#### 1 Introduction

The current length of the working week is neither the most efficient, nor the most optimal for society. Reducing it would certainly bring benefits (economic as well as social and ecological) (Spencer, 2022). Shorter working can help tackle these issues by giving workers right to time, shifting the balance between work and non-work activities in our lives and valuing them both. As it is a problem that affects the whole society, is necessary to develop this movement into a national policy strategy introduced to tackle some of our biggest societal challenges around inequalities and sustainability (Chung, 2022). Recent research, however, highlights concerns with the way that the company sought to introduce a four-day working week and casts doubt on its benefits as a basis for broader reform (Spencer, 2022). In circumstances of low or zero economic growth analysts have claimed that Work Time Reduction (WTR) can reduce unemployment, as it allows for the re-employment of displaced workers through work sharing (Berniell & Bietenbeck, 2020). The crisis can provide us with an opportunity to build back better, and maybe it is high time we do so (Chung, 2022).

## 2 Why a four-day workweek?

One reason why the four-day-week has gained a lot of interest across the world is due to its potential for productivity gains. Long working hours also inhibit workers' recovery time necessary to maintain their well-being, and to increase work engagement and proactive behaviours, ultimately impacting on job performance outcomes. In such cultures, working long hours in the office are necessary to signal one's commitment, motivation, productivity and performance. However, as many organisations consider working long hours as a sign of commitment, many workers 'perform' or pretend to work long hours to ensure their competitive edge in the organisation and the labour market as a whole (Chung, 2022).

From a theoretical point of view, working time may affect health because of potential direct impacts on the job, such as physically strenuous work leading to exhaustion, or because of potential indirect impacts due to the effects of working hours on income and the time

available for health production at home (Berniell & Bietenbeck, 2020). According to data of workers in the Netherlands has shown that highly engaged workers reported fewer errors compared to workers with burnout (Veal, 2022).

Although shortening the work week is a subject undergoing intense study, working time experiments with shorter working hours were already carried out in our society with different formulation of scenarios such as: Four-day workweek: Three-day weekend, Four-day workweek: Free Wednesday, Workday reduction, Increase in personal holiday entitlement and Workforce minimization (King & van den Bergh, 2017). Being the first one, the scenario which brings more attention to the labour market because not only would such redistribution reduce unemployment and associated public health costs, it could increase productivity, reduce CO2 emissions from commuting, production and consumption and improve work-life balance (Kamerāde et al., 2019).

### 3 Gap in literature and Research Question

As working time reduction is a topic on the agenda for an increasing number of companies and governments, it seems important to have an idea concerning its impact on the lives of employees and the organising/productivity of work. However, what eventually happens when people reduce their working hours might not always be what these people wish to do. Norms, values and conditions also determine reality (Mullens & Glorieux, 2022).

Because the approaches currently used to reconcile work and family have not been successful, alternative strategies (such as a reduction in working hours) are needed to achieve a work–family balance (Abendroth & Pausch, 2018).

The research problem is to find what is the most balanced strategy to adopt the four-day working week, enhancing the results in four aspects regarding people's life and companies' success, which are productivity, environment, learning a new skill and income. Considering the research available until today, these aspects were not explored enough to take advantage of its resources and execute it in real life.

There are several reasons as to why now is the time to think about the introduction of the four-day-week. The COVID-19 pandemic has given rise to high levels of mental health issues

across the population, and has amplified inequality patterns across gender and class. Shorter working hours are also necessary to rebuild our economy, in addressing the productivity decline, and help rejuvenate tourism, hospitality, and the creative sectors that have been hit the hardest during the pandemic. A national move to a four-day-week also needs a review of other existing laws and policies to facilitate its intended outcomes. This includes a review of the minimum and living wage to ensure that shorter working does not lead to further income insecurity – as was the case in Korea when introducing its 52-hour limit policy (Chung, 2022).

### 4 Literature Review

This review intends to synthesize the literature concerning the topics examined in this study. Shortening the working week hours is nothing new in our history, it belongs to the evolution of our society, where multiple variables must be considered. The results require careful analyses as a result of direct and indirect effects, with tremendous consequences in a near future.

According to Lepinteur (2019), the changes in working-time, by the end of the 1990s in Portugal and France, increased the job and leisure satisfaction of the affected workers in both countries.

Several studies show how long working hours and overtime impacts individual's physical and mental health outcomes costing UK employers more than 10£ billion annually. However, the negative impact of long working hours goes beyond its impact on workers and companies. For example, when fathers work long hours, children generate negative views of their father's job and of the time spent together (Chung, 2022).

In accordance with employees with increased schedule control or flexibility have less emotional exhaustion, burnout and fatigue (Hokke et al., 2021). For example, sick leave is reactive rather than preventive, and only addresses the issues when things have gone wrong rather than tackle the root cause before problems arise (Chung, 2022).

At the moment, four-day-week policies are largely introduced at the company level, mainly for productivity enhancing and worker recruitment/retention purposes. However, lower-pay sectors or smaller companies may not feel a need to, may find it difficult, or may not have the capacity to introduce this policy. Relying on company-led approaches may result in more segmentation (Chung, 2022).

The policy challenge would be to find ways to reduce and distribute working hours so that the beneficial effects of paid work are retained for the majority of workers and current inequalities are not increased (Kamerāde et al., 2019).

### 4.1 Productivity

Labor productivity is increased through two channels: the first is applying advanced technology to tasks during work hours; and the second is the possibility that the self-fulfilment and self-realization individuals establish through leisure will positively affect their productivity (Cui Dan et al., 2019). All in all, the acceptance to work shorter hours in the experiment was constructed through the aims, i.e. to enhance employment, improve the quality of services and maintain work capacity, and not specifically to facilitate time use between work and family (Anttila et al., 2005).

In accord with Hokke et. (2021), long hours of work not only may decrease the productivity as well as increase the expenses, burnout is linked to turnover, absenteeism and lower performance, our findings reinforce the importance of organisations offering parents Flexible Work Arrangements to alleviate burnout and fatigue, which in turn may improve employee engagement.

The purpose of Cui's et al. (2019) study was to demonstrate that individuals with high feelings of well-being perform better than those with low feelings of well-being, and leisure participation can improve personal competency and work performance, which will then enhance their labor productivity. Therefore, people who participate in more leisure activities are happier than those who do not, and their working efficiencies are more efficiently. However, there is some evidence that TV can produce a drowsy and passive state. Also, people who watch more TV are less happy than those who watch less TV.

If the overall number of hours worked in the economy fell by 17.5%, it would be logical to assume that output per employee would also reduce by 17.5%. However, it is likely that the hourly productivity of each worker would then increase, as a result of reduced fatigue and absenteeism; improved morale, and more focus due to the limited working time. A recent study showed that this was true for munitions workers during the First World War. Motivation is an important factor of productivity on top of fatigue (King & van den Bergh, 2017).

However, although some economists suggest that leisure is effective in the economic aspects, most neoclassical economists assume that leisure time has no influence on the quality of human capital. For example, the neoclassical inter-temporal substitution model considers leisure time as a pure substitute for working hours and has no influence on labor productivity. As a result, they took more account of the negative impact of leisure on productivity and economy but ignore

the possibility that leisure time could have positive effects on labor productivity (Cui Dan et al., 2019).

The overall effect on an economy's output is difficult to predict. Businesses may decide to compensate the reduction in hours worked per employee by hiring extra staff, which could even result in an overall rise in output if the productivity per worker increases (King & van den Bergh, 2017).

Unemployment is associated with many negative individual and societal consequences, contributing to poverty and social inequality, and to a decline in mental, physical health and wellbeing of the unemployed people and their families. High unemployment increases government welfare and health expenditures. Work-related mental ill-health costs the UK economy up to £70 billion per year (Kamerāde et al., 2019).

Crucially, the chief stated goal of a four-day working week was to increase productivity. This goal was internalized by workers and became a standard for evaluating the success of a four-day working week. The problem was that higher productivity was put ahead of other things. Workers felt more pressure to perform at work to meet the stated productivity target. They also came under greater monitoring to comply with this target and felt under greater obligation to work hard in order to make the experiment a success (Spencer, 2022).

Long working hours have been shown to be associated with cardiovascular disease, high risk of diabetes, stress and poor mental health, and work–family conflicts. Long working hours are associated with ill health and unhealthy behaviors such as smoking, heavy alcohol consumption, and lack of physical exercise, which are important contributors to largely preventable chronic diseases. Studies have shown that workers compensate for overtime-related job stress by consuming more fatty and sweet foods and that long working hours act as a potential barrier to regular exercise by limiting the time available for nonwork activity. Furthermore, job stress is believed to induce smokers to smoke more and to tempt those who have quit smoking to relapse because smoking is supposed to ease stress. The estimation results indicate that a reduction in work hours induces individuals to exercise regularly. A reduction in work hours also decreases the likelihood of smoking, with impacts somewhat more pronounced for heavy smokers. While a work-hour reduction substantially increases the probability of drinking participation, it does not significantly affect the likelihood of frequent or daily drinking (Ahn, 2016).

As mentioned before, reduction of working hours was already successfully implemented, there are many examples proving it. Andrew Barnes, a New Zealand-based businessman, might perhaps be seen as the Henry Ford of the current era, except for the fact that his company, where he has successfully implemented a 4/32 work-week, is an insurance company with 250 employees rather than an industrial behemoth employing tens of thousands. The Japanese office of the global software company Microsoft conducted a short trial of a 4/32 week over a five-week period in 2019, without loss of pay. Press reports indicated that the outcomes were: more efficient meetings; happier workers; and a 40% increase in productivity (Veal, 2022).

### 4.2 Environment

The findings about whether the four-day working week is beneficial for the Environment or not is a controversial subject. Each author abords different points of view, emphasizing distinct themes, such as income disposal, total hours worked, or type of activity practiced.

A majority of the country-level studies showcase a positive relationship between hours worked and particular environmental impacts, meaning more hours worked increases environmental harm. Moreover, from the perspective of quality of life, our findings suggest that working fewer days per week is more beneficial compared to shorter days, giving support to a four-day working week. At the same time, we found that working fewer days may result in a smaller reduction of environmental impacts compared with shorter days. (Ola Persson et al., 2022).

When workers are coordinated to not be working at the same time, energy savings are made both in individual uses, such as catering, and pooled uses, such as heating. When work reduction is uncoordinated, for instance when workers can individually decide when to take holidays, energy reductions can only be made on individual uses. This effect would also vary between the industrial and service sectors. Some industries operate under continuous production with employees working in shifts rather than conforming to traditional daily working hours. These industries are very unlikely to reduce their operational hours, and will therefore not lower their energy consumption. However, the industries most likely to have shift patterns, such as metal and chemical industries, tend to be the among the most energy intensive. For this reason, we will make a conservative

assumption that only 50% of industry is able to reduce their operations, and with it energy use. (King & van den Bergh, 2017).

Using the 2005 UK Time Use Data, we can therefore calculate that the increase in travel for purposes other than commuting, such as shopping and leisure, would increase by 4.4% (King & van den Bergh, 2017).

According to King & van de Bergh (2017), with more time for leisure and community activities, it is conceivable that health in society will increase due to reduced stress levels and more active lifestyles. This could reduce the use of health care services and related carbon emissions, which account for 8% of the carbon footprint of the United States.

### 4.3 Learning a new skill

Leisure experiences have attributes such as aesthetic appreciation, companionship, enjoyment, escape, and relaxation. More time could be allocated for household work and childcare, leisure and personal needs, and people would be able to experience a better balance, leading to increased happiness and better overall health (Mullens & Glorieux, 2022). These positive outcomes of leisure may enhance a person's ability to satisfy the work requirements and his or her importance to the organization (Cui Dan et al., 2019). The goal here is to take time to reimagine and reinvent our lives, relationships, families, etc (Mullens & Glorieux, 2022). One common way for employees to improve their chances of workplace promotion is to invest in their human capital such as by acquisitions of qualifications and skills (Kim, 2022).

The average 4/32-week worker would treat the additional day as an additional weekend day, resulting in increased demand for associated goods and services related to 'lawn and garden care, home maintenance, social activities and sports'. However, if this is the case, assessment of the net effect would need to be take account of the fact that, with no increase in pay, the additional spending would be at the expense of reductions elsewhere. New Zealand trial reported by Barnes (2020) used their additional non-work time to: accomplish tasks in personal life; participate in family life; 'restore and reconnect'; 'learn to contribute'; and 'explore and imagine' (Veal, 2022).

According to a study related to German fathers and their preferences for shorter working hours for family reasons, the distribution indicated that the most common stated reason was 'more leisure time' (44%), followed by 'family reasons' (39%). The share of childless men who desired to reduce their working hours for family reasons was rather low (5%), whereas the great majority of the childless men wanted to reduce their working hours to have more leisure time (74%). We included fathers' age in our analysis, assuming that younger fathers must still invest in their careers giving them less capabilities for the preference for shorter working hours. Moreover, we included fathers' monthly income (logarithmized), because those with a high monthly net income would also have higher opportunity costs by reducing working hours if this change would affect their income (Abendroth & Pausch, 2018).

The purpose of Thompson's et al. (2021) study was to understand how the four-day school week worked. Predominantly from rural contexts, cite financial reasons; other key reasons they cite include teacher retention, student attendance (i.e. the non-school weekday facilitates participation in athletics and appointment-related absences without impacting school attendance), and rural-related issues (e.g. commuting time farming/ranching responsibilities). We examine several key outcomes, including high school test scores, student absences, and persistence in school (e.g. on-time grade progression, dropout, and on-time graduation). Moreover, these findings may reflect greater learning impacts of lost instruction due to the more rigorous high school curriculum and that students' home environments may be less equipped to facilitate off-day engagement with the more rigorous coursework in these grade levels compared to younger students. Beyond financial motivations, one of the key rationales for use of the four-day school week is to avoid pre-existing student absenteeism due to travel to sporting events, appointments, and family farming or ranching commitments that occur in many rural settings. A possible explanation for the greater increases in chronic absenteeism in non-rural areas is that students who are more connected to urban centers may be taking advantage of opportunities provided by the extended weekend brought about by the four-day school week, including travel, employment or internship opportunities, or college classes that may not be an option to students in more remote, rural settings. Interestingly, we find that among rural four-day school weeks, there is an 11.1 percentage point increase in the likelihood a student graduates on-time (in four years) – a potentially positive aspect of the four-day school week for these rural communities.

According to Lee & Lee (2021) who examined the transition of school week from 5.5 to 5 days gradually from 2006 to 2011, which the main purpose of the policy was to enhance the quality of family life and to promote balance between work and family. The activity in which children spent the second most of their extra time was studying outside of school. They spent 30-54 min or 15–26% on average of their extra time studying by themselves or at private tutoring institutes. That is, children and parents tried to compensate for their loss of studying time due to the shortened school week. Among other things, in Panel B, we show that children with highereducated fathers spent more time studying outside of school; children of fathers with high-school education spent 31–45 min more on their studying, and those of fathers with college education or higher spent 64–76 min more. The changes were all statistically significant. On the other hand, we also found that children of fathers with less than high school education spent more time studying outside of school by 11–35 min. The main activities that children participated in at home during the freed time included sleeping (87 min), watching television (34 min), and playing video games (10 min). We also found that both parents reduced working hours after the school week was shortened. This is not surprising because the children in our sample were 13.6 years old on average, necessitating an adult caregiver at home. It is somewhat surprising to find that parents could reduce their working hours so flexibly. This could be possible because firms also transitioned to a fiveday work schedule. Our results reveal some differences between fathers and mothers. For example, fathers increased their time spent on childcare instead of working in the labor market, whereas mothers reduced their time for childcare. Again promoting the work and family balance was the policy's main goal, so we can say the policy achieved its goal; parents stay longer at home together with children as they do not go to school.

A noteworthy difference can be found concerning the form of WTR, as those who work fewer days per week report that they spend more than twice the amount of time on short holiday trips compared to those working shorter days (Ola Persson et al., 2022).

The empirical results have important implications for policy makers. The positive effect of leisure time on work efficiency cannot be ignored, although work remains the central mechanism for distributing goods and benefits at the social and individual levels (Cui Dan et al., 2019).

The development of new products in leisure time is commonplace in new technologies. Steve Wozniak kept his job at HP for a year after inventing the Apple computer with Steve Jobs. Facebook started as a side project. Markus Persson, a computer programmer, developed Minecraft on the side, a computer game that he sold to Microsoft for \$2.5 billion. Kevin Systrom was in Mexico with his girlfriend, on vacation from his job in a start-up, when he had the idea for Instagram. Many big tech firms, like Google, give 20 per cent of the time to employees to dedicate to their own projects. It was this practice that brought Google News, Gmail and AdSense. How many art collections, in homes or in museums around the world, were built as a hobby? I won't even go into sports. If you google "Olympians with Day Jobs", each hit will be a unique life story of someone who was at their best outside work. You could argue that all the examples I documented were achievements of people who made it, even without the four-day week. This is true, but as Sherlock Holmes taught us, the key is not what you see, but what you don't see. How many people had to sacrifice their dreams for a job that pays the bills? How many inventions were not created, or how many new products were not developed, because people didn't have time to devote to their passion (Gomes, 2021)?

### 4.4 Income

Jahoda (1982) argues employment is more than an income source (i.e. the manifest benefit); it also supplies latent psychosocial benefits including time structure, collective purpose and social contacts, identity and activity. The loss of these benefits due to unemployment damages wellbeing. Some of these differences can be explained by the selection effect: people with lower well-being are more likely to become unemployed. Unemployment itself also leads to a decline in mental health (Kamerāde et al., 2019).

For example, as argued by Farzin and Akao (2004), labour is not only a source of income, allowing material needs to be satisfied, it also provides non-pecuniary benefits such as status and recognition which may be reduced if working hours are shorter (Lepinteur, 2019). The key proposition is that in contemporary Western societies paid work is not only a source of income but also crucial for one's mental health and wellbeing. Therefore unemployment and economic inactivity are often associated with poorer health outcomes (Kamerāde et al., 2019).

In one of the few experimental studies in this literature, Åkerstedt et al. (2001) found that a reduction in working hours at constant earnings improved sleep quality, mental fatigue, and heart and respiratory symptoms among female health care and day care workers in Sweden (Berniell & Bietenbeck, 2020).

Mandatory reductions in the standard number of working hours have been discussed and implemented in a number of countries in recent decades. Under standard assumptions, a reduction in working hours, keeping income constant, is likely to increase utility as leisure-time rises without any fall in consumption. The French and Portuguese reforms (by the end of the 1990s) acted to reduce working hours but stipulated that monthly earnings should remain constant (Lepinteur, 2019).

In the last few decades, organizations have made substantial efforts to address the gender inequality issue in the workplace, such as by implementing affirmative action to hire women for a certain percentage of upper management and to close the pay gap. However, women are still paid significantly less and fewer in number in leadership roles compared to their male cohorts (Kim, 2022). The long working hours issue is the belief that too large a proportion of employees work an excessive number of hours per week over and above the 'standard' work-week. When the solution is for one parent to work part-time, this invariably falls on the mother in a heterosexual partnership (Veal, 2022). According to Eurostat (2020), 8.69 million people are working in the Netherlands (full-time and part-time), of which 50,39% corresponds to part-time, where 70.68% are women. In Denmark, 2.76 million people are working, of which 22.68% correspond to part-time, and 67.73% are women. Also in Finland, 2.43 million people are working, of which 14.09% corresponds to part-time, where 64.85% are women.

If WTR with a salary cut is utilized mainly by higher-income earners it could lead to a lessening of economic inequalities (Pullinger 2014) while increasing temporal inequalities as affluent groups are able to enjoy ample leisure time while groups with lower earnings are forced to work long hours to meet essential needs (Ola Persson et al., 2022).

As a result of working fewer hours, we expect to see a proportionate drop in employees' incomes, although this could be partially offset by any increases in productivity per hour worked. In terms of take-home income, this effect is likely to be further offset due to progressive taxation systems common in the OECD countries (King & van den Bergh, 2017).

During 1996/1998, working time experiments with shorter working hours were carried out in 19 municipalities in Finland. The experiments were implemented with a State subsidy and the main motivator was to increase employment. On the average, the wage loss was seven per cent from the 20/25% reduction in hours, and in some cases full compensation was paid. It is somewhat surprising that the level of salary loss did not affect the success of implementing the experiment from the participants' point of view. Some of the employees implied in the interviews that the loss of salary had been regarded as such a small inconvenience that the time together with children and the relieved work load was worth it. Thus, the reduced working time and work exhaustion was a greater benefit than the loss of pay a disadvantage (Anttila et al., 2005)

# 4.5 Summary of Literature Review

Table 1 - Summary of Literature Review

Author, Year	Main Topic (Actual Research)	Main Issues (Future Research)	
Abendroth & Pausch, 2018	A cross-sectional study of german fathers for shorter working hours.	A study of longitudinal data concerning the desire of fathers for shorter working hours, specially in other countries.	
Anttila et al., 2005  An experiment of reduced working hours in Finland.		Understand which Finnish work organizations desire to improve the time between work and family and not only work.	
Berniell & Bietenbeck, 2020 The effect of working hours on health.		To analyze how costly will be to hire additional workers considering the impacts of long working hours nowadays.	
Chung, 2022	Set out a move towards a four- day-week, explaining why social policy scholars should lead the debate	Understand what kinds of societal change are expected from a large-scale shift to a four-day-week.	
Cui et al., 2019	Correlation between labor time and leisure time	Examine the impacts of leisure time in non-OECD countries	
Hokke et al., 2020	Australian mothers' and fathers' use of formal (employer-provided) and informal (self-directed) work arrangements and associations with work-family conflict and health outcome.	A better understanding of parents' use of informal work accommodations, relating it with parents' health and effectiveness of work-family management.	
Kamerāde et al., 2019	What is the minimum amount of paid employment and optimum number of working hours at which the mental health of workers is at its highest	To evaluate longer term (> 1 year) impacts of changes in working on wellbeing and mental health.	

Table 2 - Summary of Literature Review 2.0

Author, Year	Main Topic (Actual Research)	Main Issues (Future Research)
Kim, 2022	Examines workplace promotion records of more than 50 000 employees at an international IT service company.	Examine how the previous theorization of gender discrimination in the workplace is related to gender inequality in the chances of promotion.
King & van den Bergh, 2017	Understanding of five different scenarios to reduce the working hours of full-time employees by 20% with the aim of cutting greenhouse gas emissions.	To consider different variable regarding the country analyzed such as some aspects of the real-world complexity inherent in real economic systems and human behaviour.
Lepinteur, 2019	Evaluates the impact of the exogenous reductions in weekly working hours induced by reforms implemented in Portugal and France on worker wellbeing.	More research to fully account for all the costs and benefits of reduced workweeks.
Mullens & Glorieux, 2022	Study the female employees' wishes and expectations and experienced reality concerning their extra non-work time.	The experiment is limited by its very small scale (about 60 participants), encompassing only one year and applying only to highly educated female knowledge workers.
Persson et al., 2022	How the motivations for and the socioecological outcomes from working less vary across different socioeconomic groups.	A deeper understanding of potential tradeoffs between social and environmental outcomes due to different policy designs and these options should be carefully considered when implementing different strategies.
Spencer, 2022	The changes regarding the four- day working week about politics of work.	Implementing new laws to defend workers' rights, especially minimum wages.
Thompson et al., 2021	Academic implications of students in Oregon attending a four-day school week, particularly in rural areas.	Provide a clear picture of overall health and well-being and broader impacts on families and communities.
Examines the 4-day workweek		A better understanding on what are the benefits of leisure time.

### 5 Methodology

## 5.1 Research Methodology

The purpose of this research is to identify what advantages and disadvantages people perceive in the possible implementation of the four-day week and how prepared their company is for its implementation. Therefore, a qualitative analysis approach was chosen to allow for a thorough gathering of pertinent data and its subsequent analysis. The methodology first took into account the identification of pertinent issues resulting from prior research, then semi-structured interviews with open-ended questions based on the issues identified, and finally, by applying data mining techniques, in order to identify patterns, extract insights and enable an in-depth analysis of the collected data.

The target was to capture real life insights of individuals with at least a few years of experience in the labour market. In the interest of having an heterogenous group of interviewees some variables were considered, such as: age, gender, work sector and hierarchy within the company.

### 5.2 Main issues, research questions and research objectives

- 1. Time is a key structural component of life and of the universe. It is therefore no surprise that consumers and other marketplace stakeholders engage with the multiple orientations of time (past, present, and future) through their daily consumption choices and marketplace activities (Robinson et al., 2022).
  - a. Research Question Do people think that the present work time is reasonable considering every field of ours lives?
  - b. Research Objective Identify which factors people would prioritize the most at their personal life and what are the ones that impact the company's outputs (considering the four-day workweek).

- 2. In everyday life, people do not always treat money as a mere object. Rather, they sometimes think or talk about money as though it is a person, attributing humanlike characteristics to it. In other words, people may view money as an entity that serves various social roles and performs humanlike actions (Zhou et al., 2019).
  - a. Research Question How willing are people to accept a lower wage in exchange for more free time?
  - b. Research Objective Understand how important is the relation between hours worked and salary.
- 3. Main Product market competition is known to have both negative and positive effects on a firm's value. The negative effects include a decrease in pricing power, which decreases profits, and an increase in a firm's risk of filing for bankruptcy. The positive effects include a reduction in equity agency costs, achieved by aligning the managers' incentives with those of the firm's investors. Managers of firms in competitive markets have an incentive to reduce inefficiency and are motivated to seek out profit-maximizing, positive net-present-value projects, which will benefit their investors (Rakestraw, 2022).
  - a. Research Question How far ahead of their own competition the business they work for is (regarding this possible implementation).
  - b. Research Objective Analyse any constraints when implementing the four-day workweek.
- 4. Managers' deeper understanding of current economic patterns is considered a key pillar of strategic management, especially with regard to competitors, financial demands, governments, or customers. Based on this ability to recognize the market demands, success factors can be identified in an ever-changing world, and this knowledge can contribute to the achievement of set goals and objectives (Murcia et al., 2022).
  - a. Research Question What must take place for companies to work four days a week?

b. Research Objective – Understand how prepared people are for a change in the number of days and hours they work each week.

### 5.3 Research instrument

The interviews were structured to last between fifteen to twenty minutes and were conducted using a script comprising two (2) sections, with a total of ten (10) questions.

The first section of the script intends to characterize the interviewee and the company by collecting the following data:

- 1. Interviewee work location
- 2. Interviewee gender
- 3. Interviewee age
- 4. Interviewee business title
- 5. Number of years working within the company
- 6. Company's sector

The second and last section aims to contextualize and understands what perception does the interviewee has regarding the topic. This part allows to address the research objectives, thus enabling to recognize if the respondent is receptive of the four-day week implementation.

- 1. In your perspective, with a shorter week of work, do you think it would exist a better balance, such as economic and social, adding value not only to our personal life but also for the company?
  - a. Related to the first research objective Identify which factors people would prioritize the most at their personal life and what are the ones that impact the company's outputs (considering the four-day workweek).
- 2. With the reduction of the working week, do you think should also exist a reduction of salary? That reduction should be the same of the reduction of hours worked? (i.e it is reduced 20% of the worked time = it is reduced 20% of the salary).
  - a. Related to the second research objective Understand how important is the relation between hours worked and salary.

- 3. Taking into account everything that includes the implementation of the four-day week (possible investment in employee training, new working methods, restructuring of new schedules, etc...), do you consider that it will have a high cost for companies? Would your competitors be able to implement it?
  - a. Related to the third research objective Analyse any constraints when implementing the four-day workweek.
- 4. Do you consider your company capable of implementing the four-day workweek?
  - a. Related to the fourth research objective Understand how prepared people are for a change in the number of days and hours they work each week.

As Table 3 suggests, regarding the aggregation of the literature review and the research questions chosen, the articles that have a strong connection with the research questions are as follows, worth mentioning that the majority of these articles have a proper experiment in reality, making them more trustworthy.

Table 3 - Integrated Literature Review with Key Research Question

Key Research Question	y Research Question What is the most balanced strategy to adopt the four-day working week?			
Main Issues (Author, Year)	Research Question	Research Objective		
How the motivations for and the socioecological outcomes from	RQ1 - Do people think that the present work time is reasonable	RO1 - Identify which factors people would prioritize the most at		
working less vary across different	considering every field of ours lives?	their personal life and what are the		
socioeconomic groups. (Persson et al., 2022)		ones that impact the company's outputs.		
What is the minimum amount of	RQ2 - How willing are people to	RO2 - Understand how important is		
paid employment and optimum number of working hours at which	accept a lower wage in exchange for more free time?	the relation between hours worked and salary.		
the mental health of workers is at its highest (Kamerāde et al., 2019)				
An experiment of reduced working	RQ3 - How far ahead of their own	RO3 - Analyze any constraints		
hours in Finland (Anttila et al.,	competition the business they work	when implementing the four-day		
2005).	for is (regarding this possible	workweek.		
2003).	implementation).	WORWEEK.		
Set out a move towards a four-day-week, explaining why social policy scholars should lead the debate (Chung, 2022).  Evaluates the impact of the exogenous reductions in weekly working hours induced by reforms implemented in Portugal and France on worker wellbeing (Lepinteur, 2019).  The changes regarding the four-day working week about politics of work (Spencer, 2022) .	RQ4 - What must take place for companies to work four days a week?	RQ4 - Understand how prepared people are for a change in the number of days and hours they work each week.		

# 5.3.1 Sample Characterization

Based on the collected data, the present section intends to provide an extensive characterization of the twenty-two (20) interviewees, and comprises seven (7) segmentation variables: gender; work location; age; type of business title; years working in the company; company sector; and finally, the type of problem.

Regarding the first variable, gender, it was possible to collect eleven (11) responses from men, and nine (9) from women, each representing 55% and 45% of the responses, respectively.

Additionally, interviewees are mainly based in Lisbon, accounting for twelve (12) of the twenty (20) interviews. The remaining eight (8) interviews were conducted to people located in Porto, with three (3) interviews, in Leiria with two (2), and in Faro, Angola and Belgium, with one (1) interviewee each. This represents a rate of 90% of the respondents working in Portugal.

In addition. as Table 4 illustrates, five (5) of the twenty (20) interviewees are between the ages of 20 and 29, four (4) are between the ages of 30 and 39, two (2) are between the ages of 40 and 49, five (5) are between the ages of 50 and 59, and four (4) are between the ages of 60 and 69.

Table 4- Interviewees' age group

Age	Respondents	Percentage
Between 20 and 29	5	25%
Between 30 and 39	4	20%
Between 40 and 49	2	10%
Between 50 and 59	5	25%
Between 60 and 69	4	20%
Total	20	100%

Furthermore, according to Table 5, out of twenty (20) interviewees the most represented professions were Professor, Lawyer, Nurse, Human Resources, Marketing, Engineer and Consultant, with two (2) interviewee for each profession.

Table 5 - Interviewees' Profession

Profession	Respondents	Percentage
Professor	2	10%
Lawyer	2	10%
Human Resources	2	10%
Nurse	2	10%
Consultant	2	10%
Marketing	2	10%
Engineer	2	10%
Journalism	1	5%
Hospitality	1	5%
Economist	1	5%
Finance	1	5%
Media	1	5%
Designer	1	5%
Total	20	100%

As Table 6 shows, Eleven (11) of the twenty (20) interviewees held senior responsibilities, such as being responsible for managing a team or an entire company.

Table 6 - Interviewees seniority level

Position	Respondents	Percentage
CEO	1	9%
CFO	1	9%
Director	8	73%
Manager	1	9%
Total	11	100%

Source: Own author

To make it the most heterogenous possible, how many years interviewees had at the company was a matter also considered, as Table 7 indicates.

Table 7 - Years of employment with the firm

Years	Respondents	Percentage	
6 or less	7	35%	
Between 7 and 14	3	15%	
Between 15 and 21	2	10%	
Between 22 and 28	3	15%	
Between 29 and 35	5	25%	
Total	20	100%	

### 6 Results analysis and discussion

In order to enable a comprehensive understanding of the results, first, this study presents an overall analysis of the captured insights, identifying the frequency and co-occurrence of words in the entire sample.

The analysis of words' frequency made in Table 8 allows to identify a pattern of words related to the fields that people are most concerned about - or not - with the implementation of the four-day work week may be found. By mentioning nouns such as hour, day, work, time, productivity, and decrease can be used to infer what people anticipate from it. Adjectives like possible, able, better, difficult, and fewer are frequently linked with a scenario in which the outcomes are not entirely accurate. The most mentioned verbs unveil an apparent course of action towards a change of scenario by implementing, reducing, making, increasing, but also by adopting a moment of reflection by thinking and believing.

Table 8 - Interviews word frequency

Nouns	Frequency	Adjectives	Frequency	Verbs	Frequency
Company	138	Four-day	40	Work	129
Hour	106	Personal	20	Think	79
Day	103	Possible	18	Implement	46
Work	78	Fewer	17	Reduce	36
Time	71	Able	14	Make	27
Productivity	67	Better	11	Increase	25
Reduction	65	Difficult	10	Believe	18
Week	63		•	•	•

Complementarily, the interviews co-occurrence of words (Figure 2) allows to identify an apparent relationship between several thoughts, which might take place during the implementation or not of the four-day workweek.

It is possible to verify that what concerns the most is a matter of how the working week well develop for the entire company, how it will affect the work that must be done during the day and how people with manage working less hours. The interviewees are more aware of important concepts like the decrease of work hours, the deployment of new time management strategies, and whether productivity would increase.

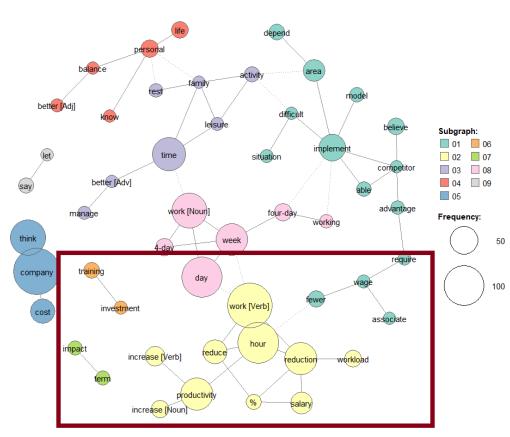
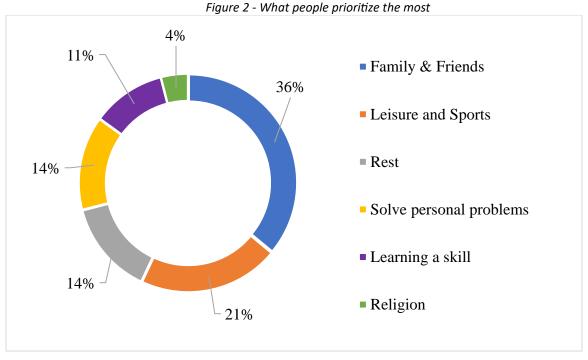


Figure 1 - Interviews co-occurrence of words

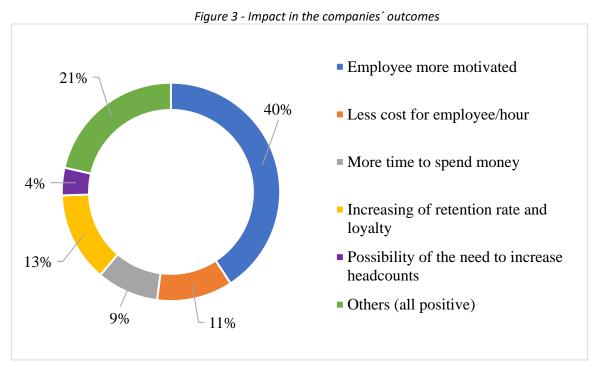
# Objective no.1

The purpose of the first question was to ascertain whether the interviewees believed the four-day workweek had sufficient value to warrant implementation. The first research objective is to identify which factors people would prioritize the most at their personal life and what are the ones that impact the company's outputs (considering the four-day workweek). This tactic aids in gauging applicants' awareness of the issue.

Six (6) criteria were mentioned (Figure 3) on what individuals would prioritize the most, with "family and friends" (36%) and "leisure and sports" (21%) being the most representative ones. Additionally, "rest" and "solve personal problems" (14%) were both noted extensively.



Additionally, in terms of how this ideology would impact (positively or negatively) the company, interviewees mentioned eleven (11) criteria (Figure 4). Employee being more productive and motivated accounts for 40%, followed by "increasing of retention rate and loyalty" (13%), "less cost for employee per hour" (11%) and "people will have freer time to spend money" (9%), being a crucial aspect to flourish the economy.



Source: Own author

Due to the nature of the topic, there is a mixture of broader themes, as Figure 5 might demonstrate. Expected themes like time management and the course of the work week are undoubtedly on peoples' minds. Additionally, several themes emerged, reinforcing how this strategy can affect not only the workplace but also health and wellness, concentration, mental health issues, life balance, and how we manage our finances.

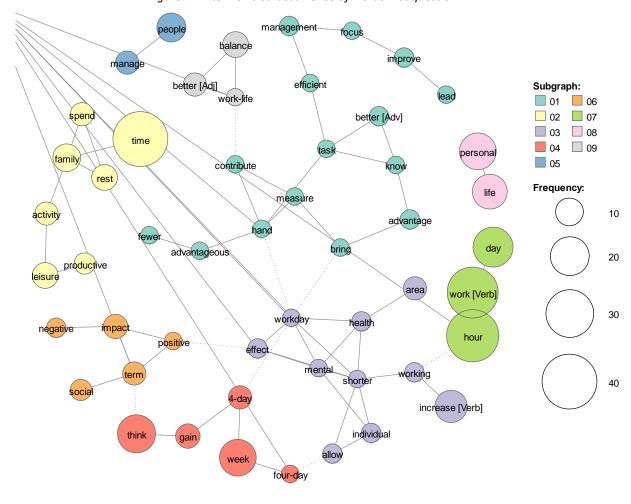


Figure 4 - Interviews co-occurrence of words' 1st question

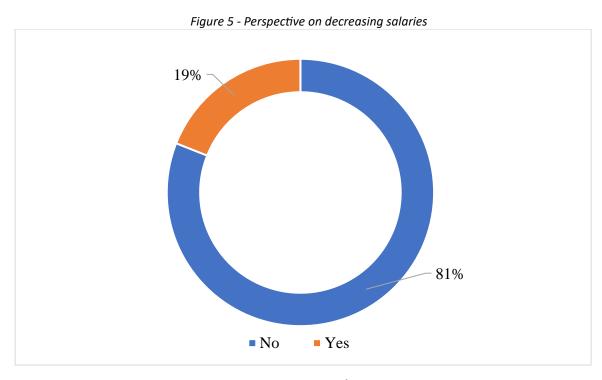
Source: Own author

According to Murcia et al. (2022) Porter (1980) argues that companies need to enter new and more attractive markets to develop their value, but Barney (1986) reports that, in extremely competitive markets, creating innovative products is unprofitable. Profits are extremely likely to be insufficient to pay for product development processes. Barney (1986) thus argues that firms should develop their internal resources to generate more competitive value, and Dierickx and Cool (1989) assert that these existing assets can produce more value.

Based on the collected evidence, it was possible to verify and understand that, the majority of interviewees believe that working four times per week will not only raise the value of the company, but also readjust how people spend their time.

# Objective no.2

The salary has a significant influence, particularly in developed countries, not only in terms of the financial impact it has but also in terms of social prestige, employee loyalty, and motivation. Having said so, interviewees were asked if they anticipated a wage drop and if that reduction would follow the loss of hours worked (for instance, a reduction of 20% in workload would result in a reduction of 20% in income). The findings (Figure 6) were clear, the majority (81%) support keeping salaries at their current levels.



Source: Own author

It is valuable to highlight some of the arguments made by those who believe that salaries should stay the same:

- "Companies don't pay for working hours, they pay for productivity."
- "I think that in the first moment it is to maintain, never to reduce."
- "To be successful the reduction of working hours must be seen and applied as an incentive to the workers and not as a cost reduction for the company."

- "...then the motivation would cease to exist..."
- "Because the reduction will be homogeneous, let's say it will affect people with fewer resources who already find it difficult to make it to the end of the month with money, I believe salary changes are always very difficult to implement and are not desirable, especially in a country like Portugal."

On the other hand, it is beneficial to highlight some of the justifications offered by people who think pay ought to be cut:

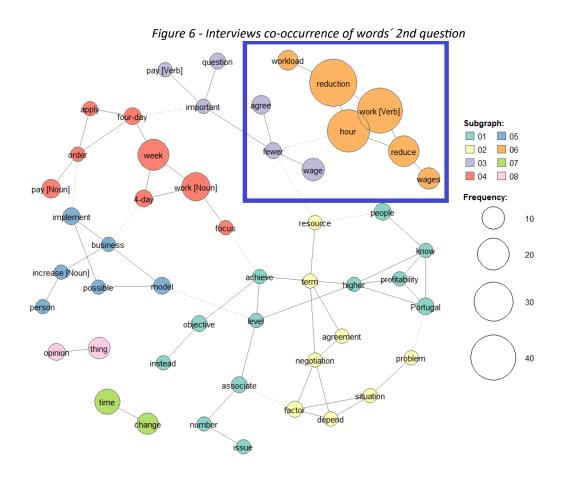
- "In a simple logic, the reduction would be proportional, but I think it should be analysed case by case. Companies with uncompetitive salary practices may find here an opportunity to reduce this gap, but I am not very optimistic."
- "...recognizing that most businesses will require more workers to implement the four-day workweek on the remaining days (service sector). To enable the business to make the investment in the people it will need to strengthen, there must be a wage cut of the same percentage as the drop in workload..."
- "the truth is that working hours are also, in my view, a metric of remuneration..."

Not surprisingly, following an identification of the most actions/verbs mentioned in the observed sample (Table 9), being possible to verify that actions like "reduction", "work", "productivity", "hour" and "salary" were the most prevalent ones.

Table 9 - Most frequent words

Word	Reduction	Work	Hour	Productivity	Salary
Frequency	44	40	35	30	28

Similar results can be obtained, as shown in the Figure 7, by analysing the co-occurrence of words, making it easy to confirm what people are most concerned about and what the reasons are to maintain or reduce the salaries.



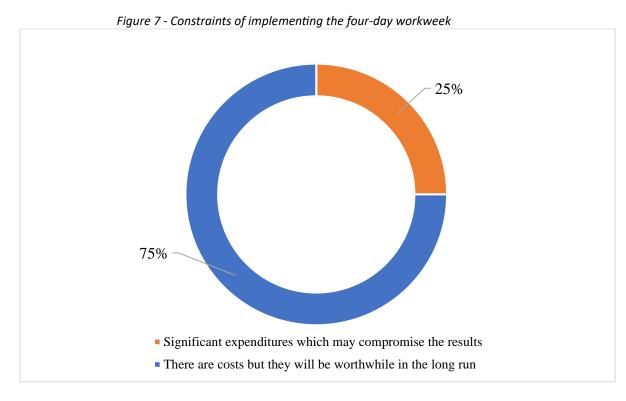
Source: Own author

In accordance with Murcia et al. (2022) Newbert (2008) suggests that resources' rareness is related to competitive advantage, thereby contributing directly to firm performance. If companies' resources or capabilities can develop in ways that reduce costs and achieve a good market response, this process can become a valuable tool for developing value-added strategies and generating competitive advantages.

According to the data collected, it is clear that the majority are unwilling to give up a percentage of their salary even with a shorter workweek. As previously stated, this shows how important wages are and aids businesses in deciding which course to pursue.

## Objective no.3

Unquestionably the possibility of shortening the workweek is a trendy topic, but given its potential global implications it makes perfect sense to investigate how simple or difficult its implementation might be. As a result, the third study goal was created to examine any potential constrains when implementing the four-day workweek. First, whether there would be significant expenditures associated with its implementation was questioned (Figure 8). Second, if their rivals would be able to use this strategy as well (Figure 9).



Source: Own author

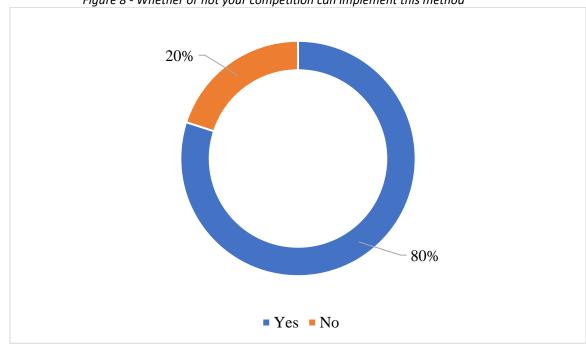


Figure 8 - Whether or not your competition can implement this method

Source: Own author

Some of the arguments made by those who believe that the expenses could jeopardize the intended outcome are as follows:

- "Only companies with a large percentage of employees working in-house will be able to do this successfully."
- "The biggest investment will be in technology through process automation."
- "For example, how are we going to reduce the workload by 20%, while maintaining productivity, in the manufacturing sector?"
- "A reduction to 4 days could have a significant effect on the cost structure of the organization and result in a challenging scenario in a transport company, for instance, where every hour the vehicle is idle results in financial loss."

Conversely, those who think it is worthwhile to make the entire investment support their position by stating:

• "I think that all changes need to be done together, some kind of educational work, for the employees to understand how to work in a new way, but I think that these trainings can be organic, can be done by people inside the company that are already

- trained for this, inside human resources, for example, and there is no additional cost."
- "For example, learning to manage your time better. Something that will not be very expensive. Another relevant fact is that companies that work 4 days (at least those that close on weekends), will save on electricity/water bills. By saving on electricity and water, this money can be allocated to the training of employees."
- \*If I am not mistaken, 40 hours of training per year that companies must give to their workers, and many of these companies don't comply. [...]. Providing training to workers can include this paradigm in these 40 hours of annual trainings with regard to structuring schedules. Companies that are well organized and have a planning capability, a well implemented medium-long term strategy, will not have difficulties. They may eventually have, team readjustments, eventually investment in software, they may have some capital investment, tangible or intangible capital. I think that once again the company will always win with the increase in productivity in relation to the costs with the investment that they will have."
- "It may have a cost of training, planning, and initial organization and methods, but it will be profitable in the future."
- "Taking as an example the start of the recent pandemic, a relatively more radical and quicker implementation, in my view the implementation itself was not very costly."

Unsurprisingly, words like "company" (58), "day" (38) and "work" (32) were nevertheless frequently used when referring to the verbs and acts that were most frequently stated. Additionally, a number of terms that are entirely related to the research subject were also highly referenced (Table 10).

Table 10 - Words highly stated

Word	Cost	Implement	Training	Investment
Frequency	27	26	16	13

Source: Own author

In accord with Murcia et al. (2022) Barney and Clark (2007) consider a resource difficult to imitate when competitors cannot use it to create superior value. The company can explore important assets developed by internal tools, differentiating itself from competitors that cannot develop these tools. This initiative becomes a resource of great importance for the user company, making its protection important. According to Baron and Kenny (1986a, 1986b), a resource can have an advantage during a certain period, providing information for competitors to develop similar strategies. In this case, it is extremely important to have a different path to develop a superior advantage.

Performed research allowed to comprehend that some uncertainty about how inimitable the implementation of the four-day workweek might be for most of the companies. It is possible to comprehend that even though it is not difficult for competitors to apply this technique, the ones who do it earlier might take advantage of it by determining the pace of a potential new era, and take advantage of it by attracting a more qualified workforce and enhancing its results, which was stated in certain responses and in the literature research that was done previously.

## Objective no.4

Due to the diversity of the group, it makes sense to investigate which job sectors people consider the four-day workweek will be more useful and simpler to implement. Therefore assessing how prepared people are for a change in the number of days and hours they work each week and whether it makes sense is the fourth research objective. The majority of responses (60%) indicate that there is hope towards the successful implementation of the four-day workweek. A significant number (30%) of the interviewees are unsure whether the time is opportune to put it into action. A small quantity (10%) believe that its implementation does not makes sense (Figure 10).

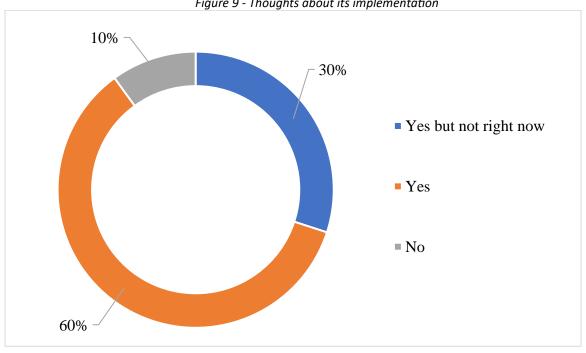


Figure 9 - Thoughts about its implementation

Source: Own author

Surprisingly, a sizable number of people believe that adopting the four-day workweek is not the best idea at this moment or in the near future. The proponents of that viewpoint acknowledged that this approach has certain obvious benefits, but some elements may compromise the intended outcome.

The following are some of the hypotheses made regarding to this subject:

- "It is unlikely to imply an increase in costs and will not be difficult to implement. However it is an area where timing is crucial and sometimes being "inattentive" means missing a good opportunity for example."
- "Although they are the minority in the company, it is possible to implement for internal work functions, not impacting our customers. For the remaining people, we will continue to work always focusing on the productivity and flexibility of our employees' schedules."
- "In other words, in journalism it is in fact a complicated area to implement the fourday work week, except if there is a reinforcement of people and, therefore, what

allows for a greater turnover so that there are 3 days without work and 4 days of work."

Interestingly, because this research question prompted interviewees to discuss their company more than the topic at hand, it is conceivable to draw the conclusion - and the Co-occurrence network supports it - that there is no specific term or phrase that predominates the responses (Figure 11).

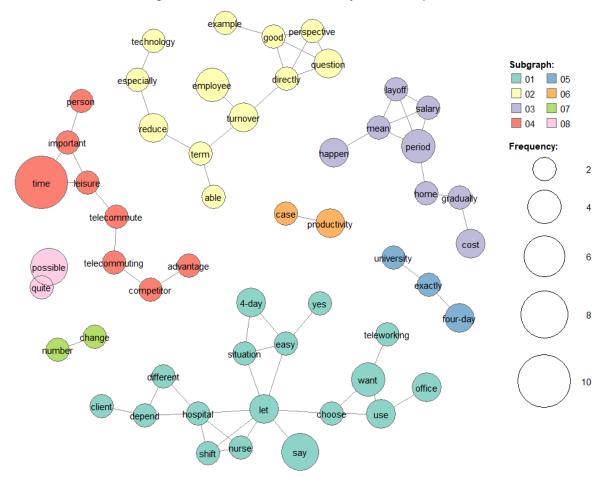


Figure 10 - Interviews co-occurrence of words' 4th question

Source: Own author

According to Murcia et al. (2022) performance, in turn, is characterized as firms' ability to make a profit by applying strategies. Peteraf and Barney (2003) confirm that companies that gain

competitive advantages develop greater financial value compared to competitors. The former firms also generate more beneficial tactics that enhance consumer loyalty and perceived quality. Based on this logic, the current research assumes that companies that develop more competitive advantage will benefit from better performance than their competitors.

As any major change in the work labour the final goal is to ensure that the business is efficiently organized to take use of the capability and exploit it in order to gain a sustained competitive advantage. According to the data gathered more than half of the interviewees believe that their organization already has everything necessary to successfully implement it.

## 7 Conclusion and Recommendations

This study provided evidence to support the idea that a four-day workweek may become the norm in our society soon by identifying the benefits and drawbacks that individuals associate with it.

Research has shown that this method is related to many aspects of our daily lives, including inequality, health, money, the amount of time we spend performing different activities, productivity, and how humans develop.

It was possible to conclude that those who want to see this strategy adopted are primarily motivated by productivity, nonetheless, this is a matter that merits adequate attention to ensure that productivity does not take precedence over other issues like mental health.

Most people are optimistic about the four-day workweek's successful adoption, according to the data analysis, claiming that it will flourish the economy in many ways. On the other hand, a smatter group of people believe that this strategy will not yield enough advantages given everything that is involved.

On the upbeat side, some promises included an improvement in health and productivity, the ability of companies to save more money, fewer stress and more time to rest. The ones who do not believe in a such easy path, pointed to aspects such as possibility of increasing the headcount and a sense of injustice for those who would not be given this opportunity.

According to the data collected, maintain the salary became crucial for the success of this strategy, without it would not be sustainable to proceed it. The clear majority also thinks there are not many substantial costs that might compromise the end result. Additionally, the ones who do it first might attract a more qualified workers and increase its profit.

The fact that this study considered important topics like productivity, self-development, income, and the environment is said to have enhanced the present research already in existence.

Future research could enrich the current findings in several ways. For instance would be interesting to have studies about which laws need to be modified, how far the shortening the workweek can go (to reach the optimal point) and bust the idea that working longer hours in the office necessarily results in more productivity, especially in Portugal.

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