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How is the 3rd free day used in the 4-Day Workweek?

Maria Reis Neves

Master in Management

Supervisor:
PhD, Nelson Jorge Campos Ramalho, Associate Professor,
Iscte – Instituto Universitário de Lisboa

September, 2024

Departament of Marketing, Operations and General Management

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Resumo

Os sistemas de produção estão sob pressão para implementar métodos mais eficientes e aumentar o ritmo de trabalho. Os resultados são o aumento de horas extras e stress, prejudicando o equilíbrio entre trabalho e vida pessoal (WLB). O modelo da semana de trabalho de 4 dias (4DWW) propõe um melhor equilíbrio entre a vida profissional e pessoal e para as organizações também pode ajudar a reduzir custos e aumentar a produtividade. Mas para que usam o dia extra livre semanal? É valorizado? Este estudo investiga quais as atividades preferidas durante o dia extra e como essas escolhas afetam a aceitação do modelo de 4DWW. As atitudes e preferências das atividades dos colaboradores foram avaliadas por meio de um questionário quantitativo.

Os resultados mostram que os indivíduos mais jovens, que trabalham em grandes empresas e têm menos tempo de serviço, a semana dos 4 dias de trabalho tem maior impacto positivo no equilíbrio entre a vida pessoal e o trabalho. "Autocultivar-se" (como ler ou estudar) e "atividades ao ar livre" são as atividades preferidas. Interessantemente, as pessoas preferem desportos e atividades em casa, enquanto jogar playstation e ver televisão são as menos populares. Atitudes relacionadas ao trabalho, como satisfação e adequação ao trabalho, não afetaram as preferências de atividades ou a aceitação incondicional da 4DWW. No entanto, manter o salário é uma componente crucial para a adoção do modelo.

Para uma implementação bem sucedida deste modelo é necessário um bom planeamento, tendo em consideração as preferências pessoais dos colaboradores e condições financeiras.

Palavras-chave: Semana de 4 dias de trabalho, Equilíbrio entre a vida pessoal e trabalho, Dia extra livre e Atividades de lazer.

Códigos JEL: J24, J28, M54.

Abstract

Production systems are under pressure to implement more efficient methods and increase the pace of work. The results are increased overtime and stress, damaging work-life balance (WLB). The 4-days workweek (4DWW) model proposes a better work-life balance and for organizations it can also help reduce costs and increase productivity. But what do you use the free day each week for? Is it valued? This study investigates which activities are preferred during the free day and how these choices affect the acceptance of 4DWW. Employees' attitudes and activity preferences were assessed using a quantitative questionnaire.

The results show that individuals who are younger, work in large companies and have a shorter length of service have a greater positive impact on WLB with 4DWW. “Self-cultivation” (such as reading or studying) and “outdoor activities” are the preferred activities. Interestingly, people prefer sports and activities at home, while playing Playstation and watching TV are the least popular. Work-related attitudes, such as job satisfaction and person-job fit, did not affect activity preferences or unconditional acceptance of 4DWW. However, maintaining a salary is a crucial component of adopting the model.

Successful implementation of the 4DWW requires good planning, considering employees' personal preferences and financial conditions.

Keywords: 4-days workweek (4DWW), Work-life balance (WLB), Free day, Leisure activities.

JEL codes: J24, J28, M54.

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1. Introduction

Productivity and competitiveness put pressure on production systems to implement more efficient production means (e.g. machines) but also to demand more work intensity which often goes hand-in-hand with longer work hours. A normal 5-day workweek (5DWW) may be formally compliant with the required labor law, but it certainly does not prevent individuals from feeling pressured to extend the workdays, not only in the office but also into their homes. This pressure on long-intense work rhythms has been resulting in complaints about work related stress, lack of Work-Life Balance (WLB), health related issues (Hsu et al., 2019) which ultimately threaten the sustainability of the whole production system. Paradoxically, longer working hours have been associated to lower productivity (Pencavel, 2015). Based on OECD (2012), it follows that the more hours a person works, the less GDP is created for the country. Therefore, working fewer hours is more productive (Figure 6, Appendix A).

Among the measures proposed to resolve this issue, the 4-day workweek (4DWW) has been gaining ground in the most recent years. Alongside the obvious free time to be invested in activities non-work related, 4DWW has been associated to better WLB (Barck-Holstet et al., 2020), better productivity (Haraldsson & Kellam, 2021), and even salary savings (Lewis et al., 2023) due to less transportation or childcare costs. Although these claims cast a positive light upon 4DWW, it overviews an important question: how is the 3rd free day time spent?

An informative finding is given by Haraldsson and Kellam (2021) that found many individuals prefer to have the free day on Mondays or Fridays, i.e. adjacent to the weekend. The motives of such preference indicate that this time is expected to be used on leisure (Allen & Hawes, 1979), such as learning new things and practicing hobbies, flexibility in care work, for example with children, older parents, people with disabilities, and reduced pressure on transport infrastructure during peak hours and a subsequent reduction in average commuting time.

Leisure comprises the possibility of traveling (e.g. taking the car to go on a trip), but also consumption (eating out), having an extra trip to shopping mall, playing more videogames, watching more TV. These activities can also easily be associated with carbon emission, which suggests that the carbon emission balance represented by 4DWW is not necessarily as positive as usually portrayed (Kallis et al., 2013).

Therefore, leisure does not necessarily have a positive impact on the environment. In fact, Henry Ford's decision to give a free day to his workers was motivated by the intention to foster buy and travel more in (his) cars. The difference thus lies in the type of activities people engage in when spending their leisure time: low intensity or high intensity (Ashford & Kallis, 2013).

Alongside this issue, there is a critical possibility that, depending on the expectations individuals have on how worthwhile the way is they occupy their 3rd free day, their degree of acceptance of the 4DWW will vary.

Considering this, it is important to know to firstly: What activities do individuals prefer to do in the eventual 4DWW free day? Additionally, what predicts the activities individuals anticipate in the 4DWW free day? And finally, how much preferred activities predict 4DWW unconditional acceptance?

These are the research questions that guide this study, and to answer these questions the thesis will start by reviewing literature on the history of the 5- and 4-day workweek and the leisure activities associated with a 3rd free day, to produce hypotheses related to the guiding questions. The methodological activities and options will be then explained to proceed to the results chapter. The last chapter will discuss these results and conclude about the answers to these questions.

2. Literature review

2.1 The institution of the 5DWW

2.1.1 History and assumptions

Over time, work has undergone numerous changes and updates in legislation, driven by the evolving concept of work itself. Before the 14th century, there was no defined work rhythm, with no concerns about productivity, pressure, demands, or precision (Le Goff, 1982). As time progressed, work became more structured. In the early 20th century, there was a reduction in the workweek from 60 hours to 55 hours. Following the First World War, Western Europe and its Western offshoots transitioned to a 48-hour workweek, corresponding to 6 workdays with 8 hours each day. Sunday became a day of rest since it is a holy day for the Christians following the biblical report of having been the 7th day of creation when God rested while the Jewish religion advocated for having Saturday as free day, pushing for a reduction from 6 to 5 workdays, regardless of the daily working hours (McCrossen, 2000). In 1926, Henry Ford popularized the concept by introducing a 40-hour workweek for his employees, as productivity remained consistent while paying the same wages. In a statement, Ford refers: “It is high time to rid ourselves of the notion that leisure for workmen is either lost time or a class privilege” (Ward, 2017, p.1).

In 1940, the 40-hour workweek became law in the USA. The significant advantages that serve the grounds of the law makers included healthier individuals without excessive working hours, fewer mistakes, and consequently, higher productivity.

Similar laws were established to address significant differences among countries where annual working hours are excessive. Based on the annual working hours per active person in the OECD in 2022 (Figure 1), less developed countries like Colombia, Chile, Korea, and Greece work more hours, while Germany, Denmark, Netherlands, and Austria work fewer hours. Portugal, however, still works more hours compared to the European Union (27 countries).

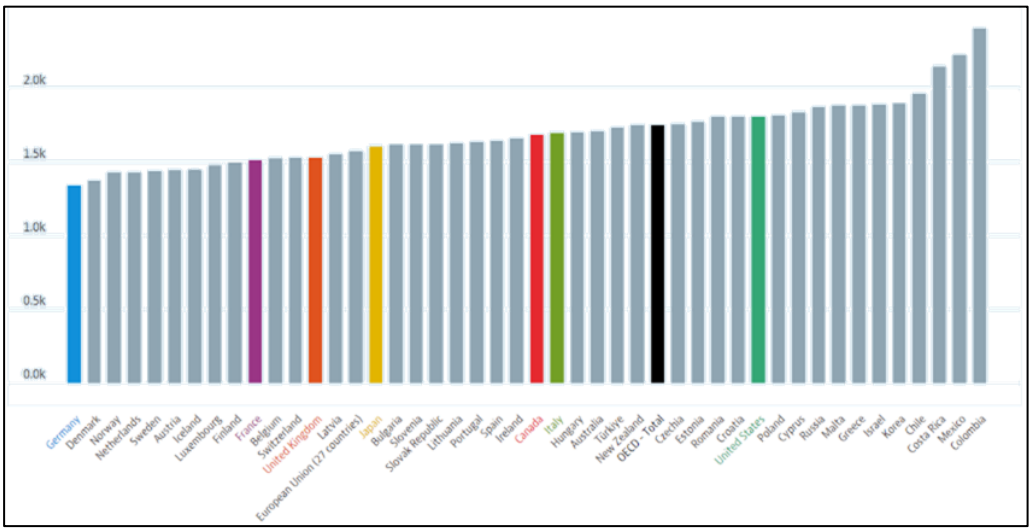


Figure 1: Annual hours worked in 2022, OECD

The relationship between working hours and productivity in OECD countries in 2022, as depicted in Figure 2, reflects how efficiently labor input is combined with other factors of production. The figure shows the economies not efficiently utilizing labor in relation to production are Mexico, Greece, and France. On the other hand, those demonstrating efficiency include Ireland, Latvia, Romania, and Poland. Interestingly, Mexico and Greece have the highest annual working hours, while France adopted a 35-hour workweek early on (OECD, 2021). Portugal displays above-average efficiency in the use of production factors.

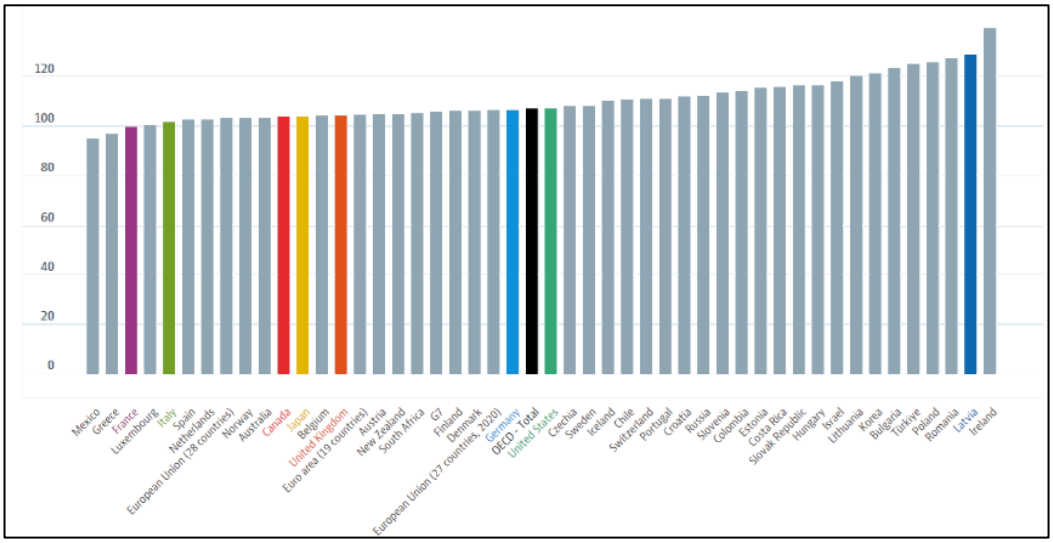


Figure 2: GDP per hour worked in 2022, OECD

Indeed, not everyone adheres strictly to the designated working hours, especially with the ability to work from anywhere through electronic means. The flexibility introduced by remote work often leads to workdays extending beyond the standard 8 hours, creating time for extra hours. Interestingly, countries with higher productivity tend to have fewer average weekly working hours. This suggests that efficiency in work processes and the smart utilization of time contribute to enhanced productivity, allowing for a more balanced and potentially shorter workweek (Eurofound, 2024).

2.1.2 Criticism to 5DWW

Over time and across generations, people have started to place a significant emphasis on leisure time, leading to the shift from a 5DWW to a 4DWW. This change is accompanied by increased flexibility, including remote work and other distance work options. According to Veal (2023), issues such as leisure time, quality of life, family life, sustainability, and well-being are starting to be called into question, hence the need to reduce one workday.

2.2 The emergence of the 4DWW

2.2.1 Rationale

A 4DWW becomes advantageous for workers as the weekend extends to three days without a loss of salary. This arrangement enhances the quality of time spent with family and friends, promotes better health care, facilitates personal development, improves household management, increases engagement in hobbies, and allows mothers to save on babysitting expenses (Fontinelle, 2022). Consequently, it drives reductions in excessive work and, in general, contributes to increased leisure and well-being inherent in work-life balance (Hopkins et al., 2023). According to a study by Delaney (2018), workers, including managers, have more time to restore and reconnect, countering the fast pace of modern life and boosting energy levels. To ensure better coordination of leisure time on the 3rd free day, workers prefer a "Friday-off" or "Saint Monday" approach (Ashford & Kallis, 2013).

For organized labor, a shortened workweek with stable salaries would decrease unemployment and increase productivity thereby boosting the economy, demand for goods, production, job numbers (McElhinney, 1972). De Spiegelaere and Piasna (2017) add to these benefits the promotion of innovation and creativity. Additionally, Hopkins et al. (2023) state it helps reduce economic and social inequalities and alleviates pressure on transportation infrastructure during peak hours.

2.2.2 History (cases)

The concept of a shorter workweek gained popularity in the 1970s in more developed economies such as the United States of America due to strong social democratic parties, a heavily interventionist state, high levels of trade union density, and coordinated bargaining between unions, employers, and the state regarding wages and working conditions (Jahal et al., 2023). The principal reasons are improved efficiency, less absenteeism and turnover, greater job satisfaction, lower labor costs, and increased productivity (Allen & Hawes, 1979). Many of the proposals advocated compressing the 40 hours into four working days (Allen & Hawes, 1979; Mahoney et al., 1975).

France became the first country to legislate a fewer weekly working hours in the 1990s with the introduction of the 35-hour workweek. However, due to a lack of cooperation from employers and weak enforcement, the law was repealed in 2004 (Estevão & Sá, 2008). As in France, other countries have carried out experiments to reduce working hours. Sweden, with a group of workers in child, disability and geriatric care in 2001, reduced weekly work hours from 39 to 30 hours (Åkerstedt et al., 2001). Japan at Microsoft's offices over a five-week period in 2019 (Kari, 2019). Iceland involving 2500 workers in 66 workplaces between 2019 and 2021, as reported in a study by Haraldsson and Kellam (2021). All these experiments showed success and satisfaction with reduction of hours in a week, showing improved efficiency, productivity, worker happiness and more time for family/friends and social activities (Veal, 2023).

Recently, with the impact of COVID-19, the idea of a shorter workweek resurfaced as an alternative for companies given the circumstances (Pang, 2020). As seen in Figure 3, this topic was extensively studied when it first emerged, and in 2022, it gained renewed attention.

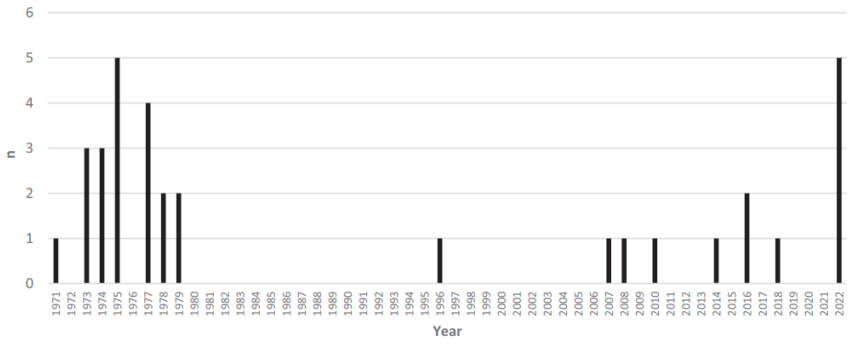


Figure 3: Frequency of 4DWW articles (1971–2022), Asia Pacific Journal of Human Resources (2023)

Countries have been investing in 32 hours per week, such as Spain allocating 60 million dollars to a pilot project without any reductions in pay and other initiatives in Iceland with fewer hours and the same

pay, Belgium with no reduction in hours or pay, and Australia adopting the 100:80:100 model, which means 100% of pay, 80% of hours (reduction) and the same of productivity, 100% (Jahal et al., 2023).

2.2.3 Portugal

In Portugal, currently, the Portuguese Labor Code, according to article 203, only defines a maximum weekly workload for all sectors of 40 hours per week, divided into 8 hours per day, with no minimum weekly hours defined. (Diário da República n.º 30/2009, Série I de 2009-02-12, version to date 15-07-2024).

The Portuguese Labor Code also establishes different regimes for working hours. It previews adaptable or flexible working hours programs, under which the four-day workweek can be included.

Until today, there are already companies with the 4DWW project implemented, such as Onya Health and 360 imprimir. A pilot project started in June 2023 by Pedro Gomes (Professor of Economics, Birkbeck, University of London) and Rita Fontinha (Associate Professor of Strategic Human Resource Management, Henley Business School, University of Reading), where there were several stages for companies to apply until the final number of companies to start the project was reached. Of the 100 companies that expressed an interest (Observador, 2023), 46 went on to the second phase to design an adaptation plan. The 45 companies that did not go ahead were mainly due to the economic conditions they were experiencing, the high financial investment required or the complexity of the implementation. The third and final phase saw 39 companies start the pilot project, spread across 10 districts, mainly in the social, industrial and commercial sectors and with a total of 1000 employees (Portugal Gov, 2023). 12 of the 39 companies had already implemented the 4DWW by the end of 2022 to the beginning of 2023. The evaluation of the pilot project is conducted through surveys, in which the State only provides technical and administrative support, and the final goal is to test a model with the ambition to extend the transition to the 4DWW and control those that have already implemented 4DWW. There is no financial support from the Portuguese State for this project, compared to other countries such as Spain, which received an incentive of 20 million (Porto Canal, 2023). As well as wanting to prove the advantages for workers mentioned above, they want to prove the benefits for companies, such as reducing recruitment and training costs, costs of temporary workers, costs of raw materials and indirect costs such as energy.

In December 2023, according to Portugal Gov, there was a mid-term evaluation of the pilot project and on average there was a 13.7% reduction in weekly hours, from an average of 39.3 to 34 hours. In 58.8% of the companies, one free day per week was offered. 41.5% opted for two weeks of nine working days. The results were positive for the workers, with 95% evaluating the experience positively and 65% of

the workers stating they spent more time with their families. In terms of mental health, symptoms of work-related exhaustion were reduced by 19%, anxiety by 21%, fatigue by 23% and insomnia or sleep problems by 19%. It can also be seen that 85% (most of the workers who responded) would consider moving to a company with a 5DWW with the requirement of a salary increase of more than 20%.

Onya Health highlighted greater productivity, employee satisfaction and creativity, and improved well-being. The company managed to create strong communication channels and periods of greater focus and feedback, where, for example, meetings required better preparation and now have an ideal time of between 30 and 45 minutes (Patrício, 2023). Improved productivity also ends up being added value on the economic side as recruitment costs are avoided, as well as the process itself, absenteeism and training and time invested with clients, deadlines and associated indicators.

The Creche Caminhos da Infância is another success story in which it has allowed for greater flexibility and versatility among the workers (Patrício, 2023). For example, the secretary reduced the amount of time she was open to parents (11%), became more versatile with the children and hired someone (4.5%). Productivity per hour increased by 6% as absenteeism was reduced.

After the study was completed in June, some very interesting conclusions were drawn (Gomes & Fontinha, 2024). The aim was not only to reduce weekly working hours but also to reduce meeting time, adopt new software, automate or eliminate processes, among others, in different formats such as 36 hours (52.5%), 34 hours (34%), 32 or fewer hours (42.5%), weekly or fortnightly. The value attributed to the 4DWW is 28% of the salary received, 12% of workers would not leave the company for any amount and 93% of workers would like to stay on.

Operationally, more than 50% report improvements in the company's processes, operation, use of technology, interpersonal relations and acceptance by clients. In terms of employee performance, what stands out most are the provision of care, creative work and the execution of projects. Only 19% will not keep the 4DWW, 81% will, of which 52.4% will keep the same model as the pilot, 23.8% on a smaller scale and 4.8% on another adjusted model. More than 90% stated they have had no financial costs and 60% no significant savings, resulting in an average increase of 12% in profits and 14% in revenue.

Mentally, workers are less worn out and exhausted, with more energy for family and friends. As a result, negative symptoms decrease after the pilot, such as anxiety, fatigue, sleep problems, depression, tension and loneliness. They thus improve their mental health by 16% and their physical health by 7%.

Overall, their satisfaction has a greater impact on the amount of free time they have. This free time is spent with family, self-care, hobbies and, finally, with friends. To a lesser extent, they participate in cultural

activities, restaurants, training and shopping. It is therefore important to explore the free time and leisure associated with the 3rd free day.

2.3 The 3rd free day

2.3.1 Leisure

People working 32 hours per week, following the 4DWW model, enjoy three free days per week, providing opportunities for leisure - a concept initially introduced by Ford for his workers. Leisure is defined as free time during which an individual has the freedom to do as they please during that period (Jahal et al., 2023). According to these authors, individual choices regarding these activities depend on personal preferences and specific circumstances. According to Mansfield (2021), these choices still depend on their identities and life stages in favor of improving people's health (physical, psychological and/or sociocultural).

Irrespective of these choices, free time ends up being a means of personal self-realization and serving society and the economy (De Spiegelaere & Piasna, 2017). In addition, leisure time is better organized and usable with the extended 3rd free day (Allen & Hawes, 1979). An important finding about leisure's benefits concerns its positive contribution for individual health in many dimensions such as physical health, mental, social and emotional well-being, thus highlighting its therapeutic potential (Caldwell, 2005).

Participation in cognitive leisure activities is positively correlated with personal development such as studying, reading, or sightseeing. Physical activity reduces the risk of cardiovascular disease and coronary heart disease. It thus prevents primary and secondary risks, reduces stress and avoids negative events in life, concludes Caldwell (2005).

In this way, active leisure can be distinguished from passive leisure (Roy & Orazem, 2021). Active leisure improves or maintains health by seeking to increase education and health, while passive leisure deteriorates health due to a sedentary lifestyle, devaluing education and health.

Based on Coleman et al. (1993), increased leisure participation has less of an impact on more serious life crises and disease symptoms, because the person usually makes this leisure time a social occasion with friends or family. A proven example is emigrants, who usually use team sports and recreational venues to facilitate their support and networking contacts. Leisure provides important avenues for developing a sense of self-determination (persisting in efforts and achieving good results) and people who have this seem to be less likely to suffer from illness and to be more resilient.

For people to be healthy, they need to exercise and one of the obstacles is watching television. In the USA, an average of 4 hours a day is spent watching TV (Iso-Ahola & Mannell, 2004). According to the same source, just 30 minutes of walking three times a week is enough to maintain good physical health. Physical exercise reduces mortality rates by around 50% among people who stop being totally sedentary and become moderately active. In general, people have a universal tendency to always take the path of least resistance in terms of time, money and effort. If they are undecided between a good TV-watching/movie-going experience at home or going to a local theater or cinema, they opt for the first option because of savings in time, money and effort. As a rule, home entertainment is an easy and convenient solution for a joint family activity. All these gestures become a powerful psychological force that pushes people towards a passive and sedentary lifestyle (Iso-Ahola & Mannell, 2004). They also add that people become more motivated for leisure when they acquire knowledge and values/attitudes, i.e. self-development. They give importance to leisure and become aware of their abilities and skills.

There is an increase in obesity due to lack of time for exercising, increasing reliance on cars and consumption of processed foods. Higher income, more education and better health endowments are positively associated with the demand for Active Leisure, while the opposite is negatively associated with demand for Passive Leisure (Roy & Orazem, 2021).

In Korea, data collected from a nationwide survey conducted on 1259 salary earners analyzed the number of working hours a salary earner is willing to reduce, so to gain more time for leisure activities. The average of respondents who had more leisure activities declared an estimated positive value of 3.04 hours per week and that of all respondents was 0.67 hours per week (Seung-Hoon Yoo, 2005).

2.3.2 Occupying the 3rd free day

The 3rd free day can be taken up by numerous activities, which can be classified in different ways. Leisure activities can be of low or high intensity (Ashford & Kallis, 2013). Those of lower cost include sleeping/resting, studying, cleaning the house, personal care, spending time with children, reading, pursuing hobbies, socializing with friends, contributing to society, and engaging in sports such as walking and running. On the other hand, activities involving higher expenses include visits to museums or theaters, shopping in malls or online, traveling, using technologies/devices, utilizing transportation, and food preparation.

We can associate low-cost free-time activities with more sedentary behaviors that take place at home and may have a low energy expenditure. Activities that cost more and involve leaving the house, are

associated with activities in movement with a high energy expenditure (Stamatakis et al., 2019). This leads to hypothesizing that:

H1*: Work conditions are positively associated with at least one mobile leisure activity.*

This serves to prove that the greater the workload, the less time is invested in oneself and, if the work is done in an office, it means less time outdoors. Likewise, remote work means employees do not have to leave home to work and therefore, they tend to remain more sedentary. In such a situation, outside work individuals may look for a balance and opt for mobility leisure activities. H1 is subdivided into:

H1a: High workloads will be positively associated with at least one mobile leisure activity or negatively with at least another sedentary leisure activity, and

H1b: Work arrangement will be positively associated with at least one mobile leisure activity or negatively with at least another sedentary leisure activity.

Alongside the study of personal impact of the 3rd free day, there is indication of systemic impacts at the environment level. Kallis et al. (2013) summed up the general position that such environmental benefits are not guaranteed because they depend on complementary policies and social conditions. These should make the occupation of the free time done with less resource-intensive which will lower its harmful impacts on the environment. Brinkley (2003, p.1) quoted Henry Ford fundamental thoughts on why the leisure time is economically beneficial but may have an environment tradeoff: "People who have more leisure must have more clothes…They eat a greater variety of food. They require more transportation in vehicles.".

2.3.3 Consequences of activity chosen for the 3rd free day

Studies from the 1970s indicate that individuals who value leisure time are generally more receptive to the 4DWW model (Jahal et al., 2023). Beliefs and attitudes can be associated with the free day: if an individual has this day, what impact do they expect it to have on their life? How much of their salary they will spend on this day? And What changes are inherent as regards their workload?

According to an experiment reported by Delaney (2018), individuals in a 4DWW program have more time for personal tasks, resulting in greater satisfaction, motivation, and productivity at work. The additional time during the weekend is dedicated to quality activities with friends and family, promoting psychological health and reducing stress, contributing to overall well-being. There are also benefits such as time to restore and reconnect, development time to learn and help academically and professionally, and time to imagine, create and explore the unknown through travel and volunteering.

Based on this we hypothesize that:

H2: Positive job attitudes are positively associated to 4DWW unconditional acceptance.

This is to check whether Job satisfaction (H2a), Person-job fit (H2b) and Job recommendation (H2c) are positively associated with 4DWW unconditional acceptance. If these are positive, then people are willing to give up a day's work for their favorite hobbies.

Based on the Portugal's report of the pilot project (Gomes & Fontinha, 2024), related principles were defined, including that it could not involve any salary cut for the employee. A pay cut can be an alternative for the company when there are no financial possibilities and individuals who are willing to give away earnings are the ones who most easily accept any 4DWW offer. The 4DWW will be associated with beliefs and attitudes as hypothesize below:

H3: 4DWW beliefs and attitudes are positively associated with 4DWW unconditional acceptance.

This hypothesis is subdivided into:

H3a: Expected impact is positively associated with 4DWW unconditional acceptance

H3b "Accepted salary changes are positively associated with 4DWW unconditional acceptance, and

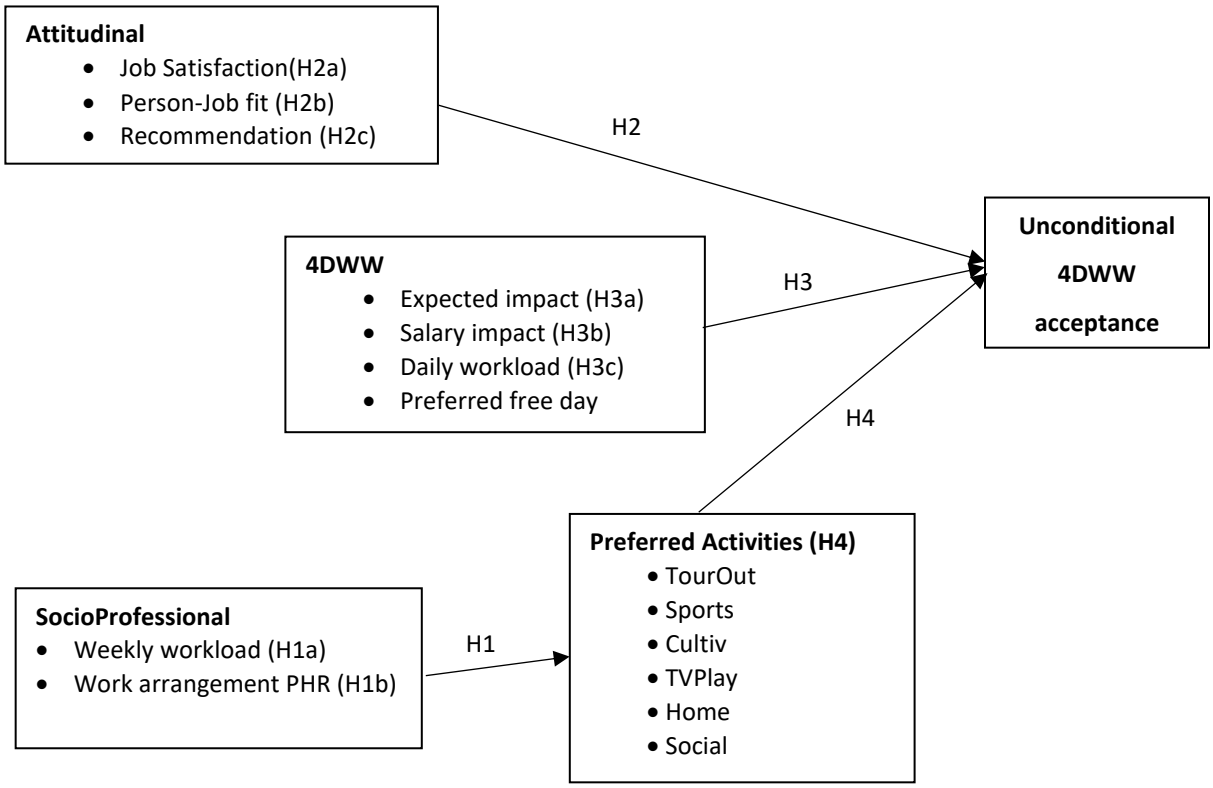
H3c Accepted workload changes are positively with 4DWW unconditional acceptance.

Overall, as regards the psychological representations of the 3rd free day contribution to the acceptance (or rejection) of the 4DWW, we can hypothesize that:

H4: "The strength with which individuals envision their leisure time in the free day (any activity) is positively associated with 4DWW unconditional acceptance".

2.4 Conceptual model

The conceptual model is shown to offer an easier depiction of the hypotheses entailed. For simplicity's sake, the conceptual model does not represent every single sub-hypothesis. Control variables are not depicted, and these are: sociodemographic variables (Gender, Age, Education, Marital Status, and Underaged children) and for socio-professional variables (Industry, Leader role YN, Job tenure, Org tenure, Employment relation, and Firm size).


Attitudinal
Job Satisfaction(H2a)
Person-Job fit (H2b)
Recommendation (H2c)
H2
4DWW
Expected impact (H3a)
Salary impact (H3b)
Daily workload (H3c)
Preferred free day
H3
Unconditional 4DWW acceptance
H4
Preferred Activities (H4)
TourOut
Sports
Cultiv
TVPlay
Home
Social
SocioProfessional
Weekly workload (H1a)
Work arrangement PHR (H1b)
H1

3. Method

3.1 Research approach

Although the research question is suitably answered via a qualitative approach (e.g. interviewing and content analysis) there is already a sufficient body of literature to inform a hypothetic-deductive approach, i.e. a quantitative conducted as a survey by questionnaire in Portuguese for the population of Portugal. (Appendix B).

3.2 Procedure

A questionnaire was produced in Qualtrics for online answering. Qualtrics is a specialized questionnaire software that has great acceptance in both Academia and professional research fields due to its sophisticated interface and functionalities. An anonymous link was generated by the software together with a QR code that granted direct access to the questionnaire.

The questionnaire started by introducing the research, stating the conditions for participation as well as all the compromises taken by the researcher into an informed consent. Immediately, the block is introduced with the number of hours worked per week and the working model of the participants. This is followed by their job satisfaction, whether it meets their initial expectations, whether they would recommend a friend to apply to the company and whether they would like to change from working 5 days to 4 days. In the context of the 4DWW implementation hypothesis, what impact the model would have, which free day of the week they would choose, the impact it could have on their salary and how many hours they would agree to work by day. At this stage, the participants were halfway through the questionnaire. In the other half of the questionnaire, participants were given activities that they had to answer whether they would actually spend their free day doing, not doing or perhaps being able to do. Lastly, socio-professional data was only requested to describe the sample.

The link together with a text inviting to participate was sent to direct contacts of the professional and personal network of the researcher as well as to LinkedIn accounts that matched the profile.

3.3 Data analysis strategy

Data analysis started with the test for psychometric quality whenever a measure was operationally defined with a scale. This was attained via a principal component analysis which is a technique that allows to infer the latent variables that underlie the semantical understanding of the construct under analysis. A principal

component analysis requires indicators that it is a valid procedure which are expressed in the KMO and Bartlet's X2 test of sphericity which should attain at least .500 and be significant for a p-value below 0.05, respectively. Although psychometric quality analysis usually implies testing reliability (typically using Cronbach alpha), the measurement was conducted with a three-point response scale, which prevents the application of such reliability analysis. Once the measures are considered valid, the data analysis proceeds to the production of descriptive and bivariate statistics based on correlations, followed by hypotheses testing. These were conducted based on mean comparison (ANOVA), hierarchical multiple regression analysis, and hierarchical logistic regression reflecting the technical needs to answer the research questions guiding the analyses.

3.4 Sample

The target audience is people who experience a 4DWW and can offer an account of all the consequences and how they spend their 3rd free day. Likewise, due to the recency of these policies (still in experimental phase in Portugal) and the fact that it is expected that such policies will extend to a much wider range of workplaces, this study also considers workers in a 5DWW to understand their acceptance of 4DWW and how they estimate they would spend the 3rd free day. In this population, the aim is to understand, among other issues, whether they would adopt the 4 days and be paid less or work more hours a day so as not to work the 5th day.

This sample comprises 178 individuals, being predominantly feminine (68%), with ages ranges mostly falling in the 18-24 years-old interval (35%) and 46-60 years-old (33.3%) with the intermediate ages 25-35 (21.5%), 36-45 (9%), and over 60 years-old (1.1%). Thus, the sample is diverse as regards age with most representatives observed in the opposing poles. Participants are mostly educated with the highest academic degree observed at the bachelor level (55.4%) followed by master level (19.2%). Most participants are either single (53.9%) or married (40.4%) with only 5.1% divorced and 0.6% widowed. Most participants report not having underaged children (66.7%).

As regards participants' professional situation, the largest part of the sample (42%) reports having a tenured contract (indefinite duration) but a considerable part also reports being either on a fixed-term contract (34.8%) or an unspecified duration contract (14%). The largest part of the sample has a job tenure below 10 years (68.6%), and an equivalent organizational tenure (72%). Most participants report having a work arrangement that requires them to work in person in the employer facilities (58.8%), hybrid arrangement (39%) or remote work arrangement (2.3%). Participants work in several industries (e.g. manufacture and energy, civil construction and real estate, commerce, transportation, hospitality,

information and communication. Most participants (70%) report not having any supervisory responsibility. Most participants report driving to their workplace (68.4%) or using public transportation (25.4%), with negligible cases reporting being at a walking distance from home (4%), using a bicycle (1.1%) or other means (1.1%). These participants originate from large companies (51.5%) with equal shares distributed by other firm sizes namely 16.9% (micro firms), 16.9% (small firms), and 14.7% (medium firms).

3.5 Measures

Due to the nature of the objective, the measures used in this study are rather simple, as there is no intention to measure behavioral complex states such as organizational commitment, or any other multidimensional concept.

To depict the current situation of the participant, the questionnaire started by asking the *weekly hour workload* and the current *work regime* (4DWW versus 5DWW).

Job satisfaction was measured with a single item ("In general, how satisfied you with your current job are?") where the participant signaled the best description of their situation in a 5-point Likert scale ranging from 1 (Very dissatisfied) to 5 (very satisfied). This single item measure has been recommended by Nagy's study (2002).

Person-Job fit was measured with a single item ("Overall, to which extent does your current job matches the type of job would were wishing for when you took it?"). A 5-point scale was displayed to the participant to signal their position ranging from 1 (very weak match) to 5 (very strong match).

Job recommendation was measured with a single item ("If a good friend of yours tells you he/she is interested in a job like yours and he/she would like to have your opinion if he/she should apply for it, what would you say to your friend?). 1=I would strongly advise against it, to 5=I would strongly advise to apply.

4DWW acceptance was measured with a single item ("If you were given the opportunity to work 4 days a week instead of the current 5, would you accept it?) to which three options were made available: 1) Yes, keeping the current conditions, 2) Yes, but I would need to understand the new conditions, and 3) No.

Expected impact of 4DWW was measured with a single item ("Considering your previous answer, what impact would a 4 work-day week have on your work-life?") which, on a scale of 4 answers, assessed whether it would have no appreciable impact to the point of being essential in the respondent's life.

Preferred free day was measured with a single item ("If you could choose your free day for the 4 work-day week arrangement, which would this day be?") where the respondent was requested to choose among one of the working days ranging from Monday to Friday.

Accepted salary changes were measured with a single item ("If you were given the opportunity to move on to the 4-working day week arrangement, would you accept a salary cut?"). Participants signaled their choice in a five-point scale where: 1= I would not accept any salary cut, 2=I would accept with a 5% cut, 3=…10% cut, 4=…15% cut, and 5=…20% cut).

Accepted workload changes were measured with a single item ("If you would be on a 4 day-workweek arrangement, how many hours would you accept to work per day?). Participants signaled their choice in a four-point scale where: 1= 7 hours, 2= 8 hours, 3= 9 hours, 4= 10 hours.

Expected activity in leisure day was measured with a 21-item scale answerable in a three-point scale. The 21 items were drafted based on Allen and Hawes (1979) as are as follows: "I would…" 1) Rest / sleep, 2) Take care of house chores, 3) Take care of myself, 4) Write / read / study, 5) Watch TV, 6) Play playstation/computer games, 7) Listen to music, 8) Staying with family / friends, 9) Walking / Jogging, 10) Practice group sports, 11) Find a part-time job, 12) Get into politics, 13) Help in community organizations / volunteer, 14) Hanging with friends, 15) Go to gym, 16) Go to shopping, 17) Drive, 18) Do tourism (in Portugal), 19) Do tourism (outside of Portugal), 20) Cultural activities (museum, theatre, cinema, musical concert), and 21) Take a course.

A principal components analysis showed a valid solution but with items having insufficient commonality ("Find a part-time job", "Staying with family / friends", "Take a course" or insufficient loading, below .500 "Go to shopping"). After removing these items, a valid solution was found (KMO=.732, Bartlet X2 (136) = 646.710, p<.001) with all commonalities above .500 (Table 1).

Table 1: Commonalities

	Initial	Extraction
I would rest / sleep	1.000	.635
Take care of house chores	1.000	.710
Take care of myself	1.000	.558
Write / read / study	1.000	.604
Watch TV	1.000	.633
Playstation / computer games	1.000	.533
Listen to music	1.000	.555
Go to gym	1.000	.593
Walking / Jogging	1.000	.598
Practice group sports	1.000	.586
Get into politics	1.000	.750
Help in community org. / volunteer	1.000	.604
Hanging with friends	1.000	.592

Drive	1.000	.616
Do tourism (in Portugal)	1.000	.698
Do tourism (outside of Portugal)	1.000	.703
Cultural activities	1.000	.674

Extraction Method: Principal Component Analysis.

The solution matrix indicates six components that account for 62.6% of total variance (Table 2) as follows: 1) Tourism & Outdoor ("Do tourism (outside Portugal)", "Do tourism (in Portugal)", "Cultural activities", "Hanging with friends"), 2) Sports / Mobility ("Practice group sports", "Walking / Jogging", "Go to gym", "Drive"), 3) Cultivating oneself ("Write / read / study", "Listen to music", "Take care of myself"), 4) TV / Screen Games ("Watch TV", "Playstation/computer games"), 5) Home based ("Take care of house chores", "I would rest / sleep"), and 6) Social-communitarian activities ("Get into politics", "Community org. / volunteer").

Table 2: Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.726	21.918	21.918	3.726	21.918	21.918	2.708	15.930	15.930
2	1.877	11.043	32.961	1.877	11.043	32.961	2.031	11.949	27.879
3	1.578	9.285	42.246	1.578	9.285	42.246	1.699	9.995	37.874
4	1.317	7.746	49.991	1.317	7.746	49.991	1.575	9.262	47.137
5	1.129	6.643	56.634	1.129	6.643	56.634	1.410	8.297	55.434
6	1.015	5.973	62.607	1.015	5.973	62.607	1.219	7.173	62.607
7	.896	5.272	67.879						
…	.332	1.953	98.456						
17	.262	1.544	100.000						

Extraction Method: Principal Component Analysis.

Table 3: Structure matrix for preferred activities

	Component					
	1 Tourism & Outdoor	2 Sports/ Mobility	3 Cultivating oneself	4 TV/Screen Games	5 Home based	6 Social work
Do tourism (outside Portugal)	**.798**	.208	.043	.039	.032	.138
Do tourism (in Portugal)	**.776**	.240	.047	-.093	.160	-.037
Cultural activities	**.769**	.044	.268	-.076	-.032	-.048
Hanging with friends	**.671**	.037	.042	.358	-.003	.106

Practice group sports	.076	**.748**	.028	-.006	-.142	.025
Walking / Jogging	.218	**.641**	.348	-.119	-.062	.003
Go to gym	.399	**.634**	.072	.143	-.040	.066
Drive	.081	**.520**	-.093	.263	.493	-.133
Write / read / study	.164	.097	**.739**	-.051	-.105	.084
Listen to music	.171	-.023	**.638**	.233	.057	-.247
Take care of myself	-.084	.306	**.565**	.033	.215	.301
Watch TV	.078	-.124	.221	**.743**	.093	-.048
Playstation/computer games	-.043	.316	-.139	**.632**	.044	.103
Take care of house chores	-.017	-.103	.023	-.033	**.835**	-.018
I would rest / sleep	.256	-.218	.088	.437	**.568**	.031
Get into politics	.039	.043	-.053	.126	-.090	**.849**
Community org. / volunteer	.265	-.074	.367	-.331	.121	**.519**
	.794	.642	.493	.422	.492	.308

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

As regards reliability, the Cronbach alphas are mostly falling below the cutoff .70 (to the exception of the first component) which would indicate a poor metric. However, the choice for using a 3-point scale instead of the traditional 5-point or 7-point Likert, is reported as being conducive to lower alphas (Peterson, 1994) which suggests the traditional cutoff might not be applicable. Additionally, as the components have content validity (they are qualitatively consistent) we opt to discard the reflective approach and treat the resulting components as formative constructs (Coltman et al., 2008) therefore dispensing the assumption that there must be a pattern of intercorrelations between these 3-point measured items.

Sociodemographic variables included gender (1=Feminine, 2=Masculine, 3=Other), age group (1= 18 to 24 years old, 2=25 to 35, 3= 36 to 45, 4= 46 to 60, 5= over 60), education (1= up to 9 years schooling, 2=up to 12 years schooling, 3= Bachelor degree, 4= Master degree, 5=PhD), marital status (1=Single, 2=Married / Cohabiting, 3=Divorced, 4=Widowed), under aged children (0 to real number), employment contract (1= fixed-term contract of employment, 2= contract of employment of unspecified duration, 3=contract of employment of indefinite duration, 4=part-time contract of employment, 5= temporary work, 6= provision of services, 7=other), organizational size (1=micro, up to 10 workers, 2=small, 11 to 50 workers, 3=medium, 51 to 250 workers, 4=large, over 250 workers), industry (1=Agriculture and fishing, 2=Manufacture and energy, 3=Construction and real estate, 4=Commerce, 5=Transportation and Storage,

6=Hospitality and Restoration, 7=Information and Communications, 8=Other services), supervisor responsibility (1=Yes, 2=No), job tenure (1=up to 10 years, 2=11 to 20 years, 3=21 or above), organizational tenure (1=up to 10 years, 2=11 to 20 years, 3=21 or above), work arrangement (1=In person, 2=Hybrid, 3=Remote work), home-to-work transportation (1=Walking, 2=Car, 3=Bicycle, 4=Public transportation, 5=Other).

4. Results

4.1 Descriptive and bivariate statistics

Sociodemographic variables have some important correlations with some of the key variables that describe work or attitudes towards 4DWW. Individuals that are in a remote work setting tend to be younger (r=-.35, *p*<.01), more educated (r=.271, *p*<.01), single (r=-.295, *p*<.01), from large companies (r=.378, *p*<.01), and less tenured (r=-.281, *p*<.01). Week workload is reported as being lower by participants that work in smaller firms (r=-.164, *p*<.05) and by those that have supervisory responsibilities (r=-.254, *p*<.01). Private transportation means tend to be reported more by older participants (r=-.417, *p*<.01) and no association was found for gender (r=-.015, *p*>.05). No significant correlations were found between any of the sociodemographic variables and job satisfaction, person-job fit (to the exception of gender with an r of .180 and a *p-value* below .05), and recommendation of job to friend. Likewise, no sociodemographic variable is associated with the acceptance of 4DWW. The expected impact of 4DWW on the participants' own work-life balance is higher on younger participants (r=-.259, *p*<.01), with an obvious lower tenure (r=-.326, *p*<.01), from larger firms (r=.225, *p*<.01) and curiously without underaged children (r=.187, *p*<.05). The preferred free day is not associated to any of the sociodemographic variables except for a modest association observed with less job tenured participants tending to opt more for the first days of the week (mostly, Mondays, r=-.166, *p*<.05). No associations are found for salary impact and preferred daily workload to the exception of gender, where women accept more workload adding to the normal 7-hour day than men (r=.239, *p*<.01) which is corroborated by ANOVA (F(1, 173)=10.799, *p*<.01). As regards the uses of the free day, there are many sociodemographic variables that show several patterns of correlations with activity options. Namely, younger participants tend to report more than older participants the intention to engage in outdoor/tourism activities (r=-.396, *p*<.01), sports (r=-.232, *p*<.01), cultivating oneself (r=-.182, *p*<.05), watching TV or playing videogames (r=-.252, p<.01), home-based activities (-.259, *p*<.01). More educated participants tend to report they would opt to do outdoor/tourism activities (r=.374, *p*<.01), practice sports (r=.175, *p*<.01), and engaging in social-communitarian activities (r=.198, *p*<.01). Single participants tend to report engaging more in outdoor/tourism activities (r=-.354, *p*<.01), watching more TV and playing more videogames (r=-.215, *p*<.05). Individuals without underaged children tend to report stronger intentions in engaging in outdoor/tourism activities (r=.310, *p*<.01), and in sports (r=.231, *p*<.01). Participants in larger companies report stronger intention in occupying their free day with outdoor/tourism activities (r=.295, *p*<.01) and sports (r=.197, *p*<.01). Also interesting is the absence of any significant association between preferred activities and both employment contract

relations and gender, which means there is no difference between women and men in activity choices in the same way that the specific job contract is also unrelated to such choices.

As regards variables more closely related to work, there is a significant positive correlation between work arrangement (PHR) and the transportation to work (r=.291, p<.01), as this latter variable is most comprising responses on 2 (car) and 4 (public transportation) we can interpret it as suggesting employees with an in-person work arrangement use more their own car. These variables have no association with those in the conceptual model relating to attitudes (job satisfaction, person-job fit, recommendation, 4DWW acceptance, preferred free day, salary impact) and only modest associations with expected impact (with work arrangement, r=.158, p<.05; with week workload, r=.147, p<.05) and one case between week work load and daily workload accepted (r=.270, p<.01). This scarcity of correlations is observed also with the preferred activities to the exception of correlations between work arrangement and tourism/outdoor (r=.326, p<.01) as well as between work arrangement and home-based activities (r=-.154, p<.05). Likewise, a couple of significant correlations is observed between transportation to work and tourism/outdoor (r=.204, p<.01) as well as between it and TV/Playstation (r=.155, p<.05).

As expected, job satisfaction, person-job fit, and job recommendation are all positively associated between themselves with correlations varying in magnitude from r=.501 (p<.01; for job satisfaction with job recommendation) and r=.520 (p<.01; for job satisfaction with person-job fit). A noticeable absence of correlations is observed between these variables and those that comprise attitudes towards 4DWW to the exception of a modest correlation between job recommendation and daily workload (r=.155, p<.01). A similar scenario is observable between job satisfaction, person-job fit and job recommendation with preferred activities where only a couple associations are significant (all with job recommendation) as tourism/outdoor (r=.197, p<.01) and home-based activities (r=-.180, p<.05).

No association was found between 4DWW acceptance and both the attitudinal variables and those expressing the preferred activities for the free day. Interestingly, only a modest association was found within the set of attitudinal variables, namely between the preferred free day and accepted daily workload (r=.148, p<.05). Attitudinal variables have also some correlations with preferred activities for the free day, mostly tourism/outdoor activities with expected impact (r=.288, p<.01), preferred free day (r=.199, p<.01), and salary impact (r=.192, p<.05). Lastly, preferred free day activities do show some patterns being the most outstanding found between tourism/outdoor and practicing sports (r=.429, p<.01).

Table 4: Descriptive and bivariate statistics

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Gender FM	1.32	.46	1												
2.	Age	2.44	1.30	-.008	1											
3.	Education	2.88	.86	.006	-.462**	1										
4.	Marital Status	1.52	.62	.033	.773**	-.391**	1									
5.	Undera.Child.YN	1.67	.47	.027	-.610**	.320**	-.572**	1								
6.	Employ.Relat	2.46	1.50	.010	.075	-.068	.083	-.063	1							
7.	Firm size	3.01	1.17	.009	-.330**	.405**	-.314**	.192*	-.108	1						
8.	Leader role YN	1.70	.46	-.212**	-.414**	.167*	-.397**	.408**	-.117	.292**	1					
9.	Job tenure	1.49	.78	-.008	.706**	-.500**	.632**	-.537**	.098	-.366**	-.386**	1				
10.	Org tenure	1.42	.72	.013	.678**	-.355**	.539**	-.486**	.102	-.222**	-.351**	.738**	1			
11.	WrkArrang_PHR	1.43	.54	-.138	-.350**	.271**	-.295**	.147	.075	.378**	.201**	-.242**	-.281**	1		
12.	Transport. Work	2.51	.95	-.015	-.417**	.252**	-.367**	.347**	.080	.264**	.373**	-.397**	-.345**	.291**	1	
13.	WeekWrkLoad	2.03	.68	.112	-.026	-.126	.090	-.046	.001	-.164*	-.254**	.059	-.071	-.073	-.086	1
14.	Job Satisfaction	3.78	1.04	-.024	-.034	.026	-.017	-.007	.072	-.121	-.012	.032	-.055	-.025	-.126	-.033
15.	Person-Job fit	3.75	.97	.180*	.043	-.031	.034	.063	.022	-.141	-.121	.034	-.026	-.098	-.141	.003
16.	Recommend.job.	3.70	1.01	.080	-.075	.114	-.068	.046	.042	.081	.013	-.131	-.085	.074	-.032	.048
17.	4DWW_accepYMN	1.51	.50	.046	-.040	-.023	-.114	.056	.133	-.044	-.047	.095	.099	.023	.040	-.022
18.	Expect.impact	2.90	.74	-.026	-.259**	.154*	-.204**	.187*	-.059	.225**	.117	-.326**	-.254**	.158*	.143	.147*
19.	Pref. free day	3.57	1.72	.092	-.124	-.035	-.116	.037	.045	-.017	-.073	-.166*	-.065	.115	-.025	-.018
20.	Salary impact	1.43	.68	-.108	.060	-.041	.129	-.124	-.017	-.023	-.005	.030	.019	.035	-.017	.014
21.	Daily workload	2.61	.77	.239**	-.075	-.002	.041	.020	.017	.024	-.047	-.108	-.159*	.086	.037	.270**
22.	TourOut	2.34	.47	-.068	-.396**	.374**	-.354**	.310**	-.063	.295**	.151*	-.329**	-.269**	.326**	.204**	.024
23.	Sports	2.26	.48	.031	-.232**	.175*	-.191*	.231**	-.070	.197**	.118	-.225**	-.240**	.007	-.054	.138
24.	Cultiv	2.50	.41	-.113	-.182*	.081	-.165*	.162*	.070	-.024	.052	-.177*	-.201**	.060	.019	.109
25.	TVPlay	1.54	.48	.100	-.252**	.136	-.215**	.169*	.026	.096	.180*	-.178*	-.170*	.005	.155*	.020
26.	Home	2.15	.57	-.049	-.259**	.134	-.166*	.176*	-.035	-.032	.067	-.157*	-.121	-.154*	.101	.005
27.	Social	1.61	.39	-.036	-.115	.198**	-.103	.204**	-.045	.016	.099	-.055	-.084	.100	.010	-.029

Table 5: Descriptive and bivariate statistics (cont.)

	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Gender FM													
2. Age													
3. Education													
4. Marital Status													
5. Undera.Child.YN													
6. Employ.Relat													
7. Firm size													
8. Leader role YN													
9. Job tenure													
10. Org tenure													
11. WrkArrang_PHR													
12. Transport. Work													
13. WeekWrkLoad													
14. Job Satisfaction	1												
15. Person-Job fit	.520**	1											
16. Recommend.job.	.501**	.518**	1										
17. 4DWW_accepYMN	-.032	-.028	-.091	1									
18. Expect.impact	-.066	-.019	.004	-.079	1								
19. Pref. free day	-.053	.016	.008	.146	.128	1							
20. Salary impact	-.048	-.134	-.114	.091	-.062	-.058	1						
21. Daily workload	.016	.135	.155*	.032	.110	.148*	-.014	1					
22. TourOut	.101	-.095	.197**	-.012	.288**	.132	.059	.033	1				
23. Sports	.045	-.040	.043	-.050	.199**	.025	-.056	.014	.429**	1			
24. Cultiv	-.080	-.050	.023	-.061	.192*	.126	-.034	.051	.291**	.246**	1		
25. TVPlay	-.141	-.099	-.046	.070	.018	-.063	.047	.001	.143	.128	.137	1	
26. Home	.006	-.041	-.180*	-.112	.129	.075	-.064	-.152*	.175*	.002	.125	.287**	1
27. Social	.011	.049	-.013	.048	.081	.069	.022	.052	.231**	.066	.176*	-.044	.034

4.2 Hypothesis testing

Q1: What activities do individuals prefer to do in the eventual 4DWW free day?

To profile the preferences for activities anticipated by respondents to occupy their 4DWW free day, Figure 4 shows the means for each group of activities and Figure 5 shows the boxplot, with the interquartile ranges and medians.

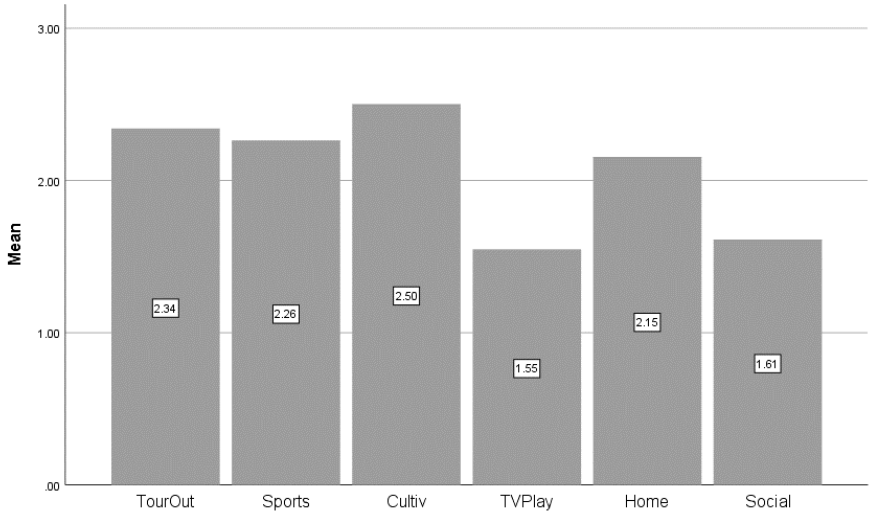


Figure 4: Means for preferred activities

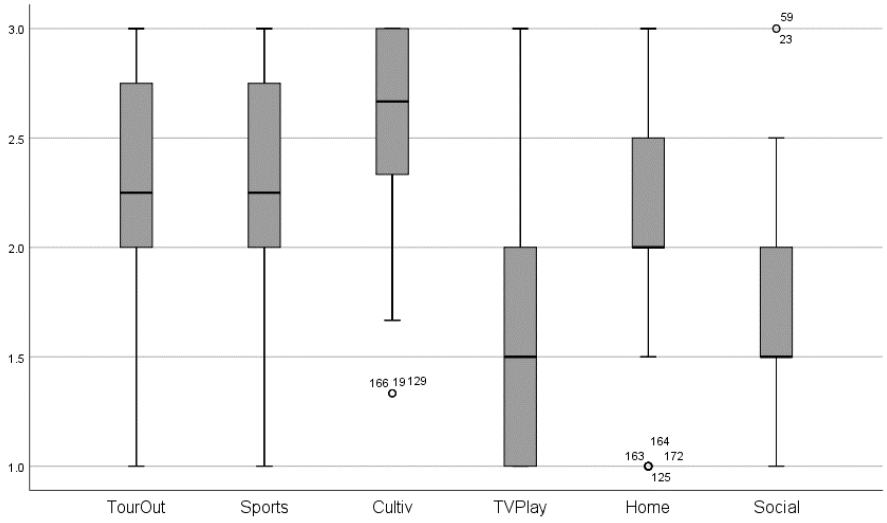


Figure 5: Boxplot for preferred activities

A repeated measures ANOVA with each activity treated as within-subjects variables showed pattern of different within-subject preferences in the sample as indicated by the low Wilk's Lambda (.164) which

is significant (F(5, 173)=176.681, *p*<.001) which means that only 16.4% of variance is not accounted for by the analysis. As the Mauchly's Test of Sphericity has a significant p-value (W=.716, X2(14)=58.5907, *p*<.01) it is necessary to proceed to a Greenhouse-Geisser correction. This showed a value of .872 with a corresponding significant statistic (F(4.361, 773.095)=148.678, *p*<.001). The partial eta square value is. 457 which indicates the differences are large.

A series of paired t-tests showed there are two non-significant cases suggesting ex-aequo rankings. Namely between sports and home based (t(177)=1.939, *p*=.054) and between TV/Playstation and Social (t(177)=-1.351, *p*=.178).

Considering the means and dispersion as well as findings from t-tests, we can state that the individuals' preferences can be ranked in descending order as follows: 1) Cultivating oneself, 2) Tourism/Outdoor activities, 3) Sports ex-aequo with Home based activities, and 4) Social communitarian activities ex-aequo with TV/Playstation.

Q2: What predicts the activities individuals anticipate in the 4DWW free day?

A hierarchical multiple regression analysis was conducted with blocks of variables sequentially added as follows: 1st step: sociodemographic (Gender, Age, Education, Marital Status, Underaged child), 2nd step: socioprofessional (Industry, Leader role, Job tenure, Org tenure, Employment relation, Firm size, Weekly workload, Work arrangement PHR), 3rd step: attitudinal variables (Job Satisfaction, Person-Job fit, Recommendation), and 4th step: 4DWW related variables (Expected impact, Preferred free day, Salary impact, Daily workload). Table 5 shows the coefficients for these predictors for each of the preferred activities.

For some of these blocks of predictors there were hypotheses established, namely pertaining to some of the socioprofessional variables with close relationship work conditions and arrangements (i.e. weekly workload, and work arrangement as H1a and H1b), also for attitudinal variables (job satisfaction H2a, person-job fit H2b, job recommendation H2c), also for 4DWW (expected impact H3a, preferred free day H3b, salary impact H3c, and daily workload H3d).

The first hypothesis proposes that weekly workload (H1a) and work arrangements (H1b) are both positively associated with at least one mobile leisure activity or negatively associated with at least another sedentary activity. As regards weekly workload, findings show that among leisure activities that fall within the category of "mobile", only sports activity has a significant coefficient (B=.187, *p*<.05). In parallel none of the sedentary activities are significantly associated with workload. This supports H1a.

Table 6: Coefficients for preferred activities

Variables	Tourism Outdoor	Sports Mobility	Cultivating oneself	TV Playstation	Home based	Social work
Sociodemograph						
Gender	-.026	.022	-.131	.130	-.070	-.041
Age	-.116	.061	.041	-.201	-.431	-.010
Education	.144	.079	.083	-.012	.060	.228
Marital Status	-.052	-.113	-.076	-.038	.066	-.002
Underaged child	.194	.118	.105	-.065	-.006	.202
SocioProfessional						
Industry	.120	.105	-.054	.029	-.016	-.114
Leader role YN	-.075	.023	-.020	.153	.012	.069
Job tenure	.176	.108	.096	.049	-.039	.187
Org tenure	-.009	-.126	-.196	-.093	.101	-.003
Employment relat.	-.078	-.063	.079	.063	.079	-.040
Firm size	.120	.170	-.082	.065	-.028	-.080
Weekly workload (H1a)	.093	.187*	.030	.059	.071	-.040
Work arrangement PHR (H1b)	.128	-.125	-.042	-.102	-.247**	.079
R^2	26.50%	4.30%	2.80%	2.60%	14.50%	0%

Note: For parsimony's sake, only the coefficients for the last step are shown in predicting each of the six preferred activities. Leisure Activities: sedentary vs mobile which are linked to low-cost/low-impact and high cost-high impact respectively.

As regards work arrangement findings show that none of the mobile leisure activities has a significant association coefficient but one of the sedentary leisure activities does have a negative significant association (B=-.247, p<.01) in line with the hypothesis. Therefore, this supports H1b.

Q3: How much preferred activities predict 4DWW unconditional acceptance?

The hierarchical logistic regression taking 4DWW unconditional acceptance as the dependent variable showed a model with good fit as indicated by the Hosmer & Lemeshow test ($X^2(8)=12.863$, p=.117) and has a -2 Log Likelihood of 187.507, and accounting for 26.5% variance of the dependent variable as indicated by the Nagelkerke pseudo-R^2. The classification table (Table 6) shows there are 107 cases

correctly classified among the 178 cases in the sample corresponding to 66.5% of overall correct classifications (as 17 cases were excluded due to missing values).

Table 7: Classification table for Predicted vs. Observed 4DWW acceptance YMN

		Predicted		
		Yes	Yes, but	% Correct
Observed	Yes	49	30	62.0
	Yes, but	24	58	70.7
Overall %				66.5

a. The cut value is .500

After entering all the predictors, the last step indicates those who have or have not significant p-values associated (Table 7).

Table 8: Predictors of unconditional 4DWW acceptance

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Sociodemograph					
Gender	-.201	-.101	-.125	-.095	.105
Age	-.181	.184	.168	.084	.118
Education	.147	-.092	-.096	-.124	-.163
Marital Status	.624	.705	.700	.925*	.885
Underaged child	-.286	-.599	-.614	-.831	-.903
SocioProfessional					
Industry		.072	.075	.095	.103
Leader role YN		.165	.187	.123	.247
Job tenure		-.650	-.622	-.805	-.748
Org tenure		-.469	-.435	-.281	-.332
Employment relat.		-.136	-.133	-.162	-.171
Firm size		.118	.123	.044	.099
Weekly workload (H1a)		.201	.198	.245	.200
Work arrangement PHR (H1b)		-.082	-.086	.053	.204
Attitudinal					
Job Satisfaction(H2a)			-.026	-.081	-.178
Person-Job fit (H2b)			.082	.094	.043
Recommendation(H2c)			.120	.135	.267

4DWW					
Expected impact (H3a)				.291	.183
Salary impact (H3b)				-.704*	-.637*
Daily workload (H3c)				-.196	-.141
Preferred free day				-.133	-.197
Preferred Activities (H4)					
TourOut					-.158
Sports					.139
Cultiv					.590
TVPlay					-.876*
Home					.713
Social					.098
Constant	-.221	.450	-.253	1.317	-.689

Variables entered on the last step: TourOut, Sports, Cultiv, TVPlay, Home, Social work

The second hypothesis proposes that positive Job attitudes are positively associated with unconditional acceptance of the 4DWW. As there are three job attitudes (job satisfaction, Person-job fit, and job recommendation) this hypothesis entails three sub-hypotheses (H2a, H2b, H2c). Findings show that none of these attitudes is significantly associated with 4DWW acceptance. Therefore, H2 is fully rejected.

The third hypothesis proposes that 4DWW beliefs and attitudes are positively associated with 4DWW unconditional acceptance in such a way that better offers (no salary loss, no compensation in daily workload, and expected positive impact) are positively associated with unconditional acceptance. The three sub hypotheses relate to expected impact, to accepted salary changes (reversed scale) and to accepted workload changes (reversed scale). Findings show that expected impact has no significant association with 4DWW unconditional acceptance (thus rejecting H3a), that accepted salary changes are negatively and significantly associated (B=-.637, $p<.05$) thus supporting H3b, but accepted workload changes are not associated, thus rejecting H3c. Therefore, this hypothesis H3 is partially supported.

The fourth hypothesis posited that the strength with which individuals envision their leisure time in the free day (any activity) will be positively associated with 4DWW unconditional acceptance. This hypothesis implies that the most chosen activities should be associated with stronger unconditional acceptance and the least chose should be associated with weaker unconditional acceptance. Findings show that the most chosen leisure activity (i.e. cultivating oneself) is not positively associated to

unconditional acceptance. However, the least chosen activity (i.e. TV and Playstation gaming) is negatively associated, as expected, thus supporting this hypothesis. Overall, H4 is partially supported.

5. Discussion of results and Conclusion

The results of the exploratory analysis of the data reveal the preferences for activities resulting from 4DWW during a possible free day. They also explore the variables that predict these preferences and the unconditional acceptance of 4DWW.

The sociodemographic variables lead to an understanding of workers' attitudes towards work arrangements, acceptance of new forms of work organization, such as 4DWW, and preferences for free day activities. Younger individuals with less time on the job, less financial stability and family responsibilities and in larger companies (which generally have more flexible policies and more advanced technological infrastructures) accept better 4DWW as they anticipate greater improvements in their work-life balance and an expectation of greater flexibility. For older individuals, with longer service and working in smaller companies, the impact of the 4DWW on work-life balance is lower.

A clear pattern of preference between the options presented was found when analyzing activity preferences using a repeated measures ANOVA. The most popular activity was "Cultivating oneself", which includes activities such as reading, writing, studying or taking care of oneself; the second most popular activity was "Tourism/Outdoor Activities". These preferences show a significant desire on the part of the participants for activities that promote personal growth and contact with nature, indicating that, on a free day, many would choose activities that encourage personal development and relaxation in outdoor environments.

Interestingly, sports and domestic activities were ranked similarly. On the other hand, social activities and electronic games, such as TV and Playstation, were the least preferred, indicating a lower interest in more sedentary activities. These results show that participants prefer less passive activities when taking advantage of free time to engage in activities that improve physical and mental well-being.

According to the hierarchical multiple regression analysis, sociodemographic variables, socioprofessional variables, attitudes towards work and variables related to 4DWW have different influences in determining preferred activities on the free day. The initial hypotheses (H1a and H1b) suggesting that weekly workload and work arrangements influence activity preferences were confirmed. Weekly workload showed a positive association with the practice of sports, which may indicate that individuals with a higher workload tend to value physical activities as a form of decompression and stress relief. On the other hand, work arrangement was negatively associated with more sedentary activities, suggesting that workers with face-to-face jobs are less inclined to spend their free time on sedentary activities.

The attitudinal variables in relation to work (job satisfaction, person-job fit, job recommendation) showed no significant association with activity preferences, rejecting hypothesis H2. This result may suggest that preferences for leisure-time activities are more influenced by personal and contextual factors than by attitudes related to the work environment.

The hierarchical logistic regression analysis that explored the predictors of unconditional acceptance of 4DWW revealed interesting results. Hypothesis H3, which suggested that favorable beliefs and attitudes towards 4DWW would be associated with unconditional acceptance, was partially supported. Although the expected impact of the 4DWW was not significantly associated with unconditional acceptance (H3a rejected), acceptance of wage changes showed a significant negative association, corroborating hypothesis H3b. This suggests that unconditional acceptance of the 4DWW may be more sensitive to salary preservation than to other factors which goes in line with one of the conclusions from the Portuguese pilot study that salary should not decrease in any circumstance (Gomes & Fontinha, 2024).

Finally, hypothesis H4, which proposed an association between the strength of activity preferences and unconditional acceptance of the 4DWW, was also partially supported. Although the most preferred activity ("Cultivating yourself") showed no positive association with acceptance, the least preferred activity (TV/Playstation) was negatively associated, indicating that those less interested in sedentary activities tend to accept 4DWW more easily. This goes in line with Roy and Orazem (2021) who have highlighted the harmful consequences of passive leisure activities which we believe are so intuitive that everyone understands such sort of leisure is time that could be better spent. This somehow goes counter to Iso-Ahola and Mannell (2004) contention that individuals will always prefer to opt for low-cost leisure activities, i.e. the passive ones. The lack of such finding can originate from the profile of this sample that is more educated than most population and therefore, following the exact same authors, can gather better conditions to understand and avoid falling in the low-cost trap.

Overall, we can conclude that findings showed that participants tend to appreciate activities such as "cultivating oneself" and "tourism/outdoor activities", which promote personal growth and well-being during free time. This indicates that the extra 4DWW time should be used primarily for activities that improve personal life, emphasizing the importance of balancing work and leisure to improve overall well-being. To maximize the effectiveness of policies such as 4DWW, it is crucial to understand the motivations that drive individuals' decisions.

Work-related attitudes, such as job satisfaction and person-job fit, did not show a significant association with activity preferences, although individual and contextual characteristics, such as weekly workload and working arrangements, have a significant association with activity preferences. The lack of

association suggests that personal factors may have a greater impact on leisure activity choices than workplace experiences.

The results on the acceptance of the 4DWW indicate that, depending on specific circumstances, the implementation of the 4DWW can be accepted to different degrees. For example, the preservation of salary and the type of activities people want to do during their free time are some examples of what can be accepted. Most people saw the change as financially viable, emphasizing the importance of organizational policies to ensure the financial stability of employees when implementing new forms of work organization. This is partially in line with Gomes and Fontinha (2024) findings were salary seems to be a driving force as evidence in the counterintuitive acceptance of returning to a 5DWW if the salary increases a proportional 20%.

As a result, the research improves understanding of various factors that influence the acceptance and potential effectiveness of 4DWW. The findings show that for 4DWW to be successful and widely accepted, careful planning is required that considers both personal preferences and financial circumstances.

Finally, this study indicates that the success of 4DWW depends not only on offering an additional free day, but also on ensuring that this day is used to improve employees' well-being and personal development.

This study had some limitations. As it is an old topic and is being studied again, the literature review was based on research from when the topic first emerged (in the 1970s) and supplemented with more recent studies. This is not truly a limitation in the foundations of the literature review but must be considered a limitation in the literature akin to the topic which does not allow to understand if the historical context plays any role in the way ideas have been evolving.

The second limitation relates to the representation of the entire working population, i.e. people who work part-time or rotating shifts (including working weekends), limiting the generalization of results. People who work part time have a lower workload and for people with rotating shifts they do not have fixed free days, so there is no preference for choosing a free day. Regional, cultural or sectoral differences exploration may add to the understanding of the full range of perceptions and judgments about the 4DWW.

The third limitation stems from the study’s focus on specific sociodemographic and professional variables although other factors such as economic conditions and organizational policies that influence the acceptance of the 4DWW could have been also considered. For example, questions could have been added such as what their salary range was and how much they were willing to accept earning more.

The last limitation concerns the scale used. A scale of 3 points was used for the individual to answer whether they wanted to do the activity (1 No, 2 Maybe, 3 Yes). This option was made to simplify the participation cognitive effort, but it may have limited the quality of response given the lower sensitivity and, consequently, this may have affected the findings due to lower variance accounted for.

Future research may benefit from building upon this study by enlarging the sample, targeting specific sectors and even specific occupations that have their own idiosyncrasies. Also, future studies would benefit from conducting mixed methods research where quantitative findings could be contrasted and better understood at the light of qualitative findings.

Overall, despite limitations, we trust the results from this study provide some valuable insights for future studies aimed at developing and applying organizational measures to improve work-life balance which may benefits from focusing on generation cohort specific effects, contrasting outdoor with indoor activities, using free time for self-development versus other activities, and salary fixed rights. 4DWW acceptance seems to follow four principles: the free day must extend leisure time (Mondays or Fridays), the free day activities must be outdoor, the free day activities must contribute for self-development, and gained economic rights cannot be withdrawn.

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8. Appendices

8.1 Appendix A

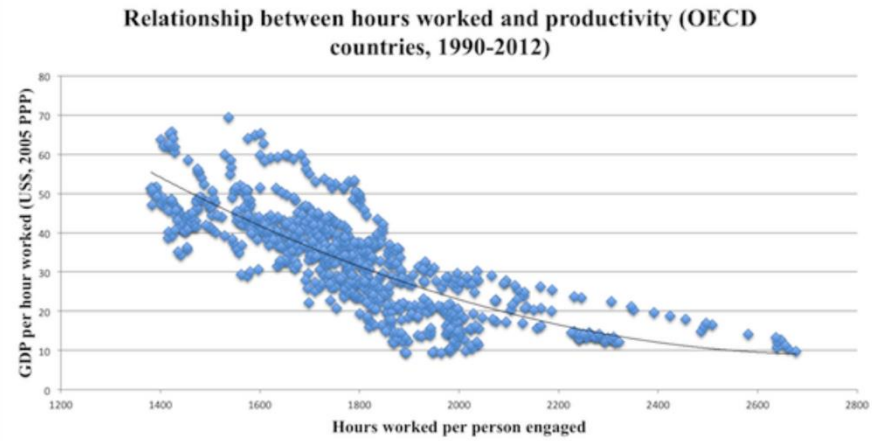


Figure 6: Relationship between hours worked and productivity (1990-2012), OECD

8.2 Appendix B - Questionnaire

Tese - 4 dias de trabalho

Start of Block: Default Question Block

Chamo-me Maria Neves e estou a realizar a Dissertação de Mestrado em Gestão na ISCTE Business School sobre a semana dos 4 dias de trabalho. Gostaria de convidar a preencher este questionário, que é anónimo e só lhe toma 4 minutos. Este estudo é apenas para fins académicos.

Se atualmente tem um emprego a full time e gostaria de deixar a sua opinião relativamente à semana dos 4 dias de trabalho agradeço a sua colaboração e disponibilidade.

Para alguma dúvida ou comentário adicional, por favor contacte-me através do e-mail: mrnss@iscte-iul.pt.

Se concordar em participar carregue na seta azul em baixo.

Obrigada,
Maria Reis Neves

End of Block: Default Question Block

Start of Block: Regime 5 dias (full-time)

Q1 Quantas horas em média tem contratualizadas durante uma semana?

- 35 horas (1)
- 40 horas (2)
- 41 a 45 horas (3)
- Mais de 45 horas (4)

Q2 Atualmente em que regime trabalha?

- Regime 5 dias (full-time) (1)
- Regime 4 dias (full-time) (2)

Q3 Em geral, qual é o seu grau de satisfação com o seu emprego atual?

	1- Muito insatisfeito (1)	2- Insatisfeito (2)	3- Indiferente (3)	4- Satisfeito (4)	5- Muito satisfeito (5)
(2)	○	○	○	○	○

Q4 Em geral, em que medida o seu emprego atual corresponde ao tipo de emprego que desejava quando o aceitou?

	1- Corresponde muito pouco (1)	2- Corresponde pouco (2)	3- Neutro (3)	4- Corresponde (4)	5- Corresponde muito (5)
(1)	○	○	○	○	○

Q5 Se um bom amigo lhe disser que está interessado num emprego como o seu e quiser saber a sua opinião sobre se se deveria candidatar, o que diria ao seu amigo?

	1- Aconselhava-o vivamente a não fazer (1)	2- Aconselhava-o a não se candidatar (2)	3- Indiferente (3)	4- Aconselhava-o a candidatar-se (4)	5- Aconselhava-o vivamente a candidatar-se (5)
(1)	○	○	○	○	○

Q6 Se lhe fosse oferecida a possibilidade de trabalhar 4 dias por semana em vez de 5 dias, aceitaria essa oferta?

- Sim, mantendo as condições atuais (1)
- Sim, mas precisaria de compreender as condições novas (2)
- Não (3)

Skip To: End of Survey If Se lhe fosse oferecida a possibilidade de trabalhar 4 dias por semana em vez de 5 dias, aceitaria... = Não

Q7 Considerando a sua resposta anterior, que impacto teria uma semana de 4 dias na sua conciliação entre trabalho e vida pessoal?

	1- Não teria impacto apreciável no meu caso (1)	2- Ajudaria um pouco a obter um melhor equilíbrio (2)	3- Ajudaria bastante (3)	4- Seria essencial (4)
(1)	○	○	○	○

Q8 Se pudesse escolher o seu dia livre para o regime de 4 dias de trabalho, qual seria?

- Segunda-feira (1)
- Terça-feira (2)
- Quarta-feira (3)
- Quinta-feira (4)
- Sexta-feira (5)

Q9 Se lhe oferecessem o regime dos 4 dias de trabalho, aceitaria perda salarial?

- Não aceitaria qualquer perda salarial (1)
- Sim, com perda de 5% remuneração (por perda salarial ou de subsídio de refeição) (2)
- Sim, com perda de 10% salário (3)
- Sim, com perda de 15% salário (4)
- Sim, com perda de 20% salário (5)

Q10 Se tivesse o regime dos 4 dias de trabalho, aceitaria trabalhar quantas horas por dia?

- 7h (1)
- 8h (2)
- 9h (3)
- 10h (4)

Q11

Já atingiu 50% do questionário

Q12 Como ocuparia o seu dia livre?

	De certeza que não (1)	Talvez (2)	De certeza que sim (3)
Descansava/dormia (1)	○	○	○
Cuidava mais da casa/tarefas domésticas (2)	○	○	○
Cuidava mais de mim (3)	○	○	○
Escrevia/Lia/Estudava (4)	○	○	○
Via televisão (5)	○	○	○
Jogava playstation/computador (6)	○	○	○
Ouvia música (7)	○	○	○
Estava com família/amigos (8)	○	○	○
Fazia caminhadas/corridas (9)	○	○	○
Praticava desportos coletivos (10)	○	○	○
Arranjava um part-time (24)	○	○	○

Envolvia–me na política (25)	○	○	○
Ajudava em organizações da comunidade/fazia voluntariado (26)	○	○	○

Q13 Como ocuparia o seu dia livre?

	De certeza que não (1)	Talvez (2)	De certeza que sim (3)
Almoçava/Jantava/Saía com amigos (15)	○	○	○
Ía ao ginásio (16)	○	○	○
Ía às compras (supermercado/shopping) (17)	○	○	○
Conduzia (18)	○	○	○
Fazia turismo (dentro de Portugal) (19)	○	○	○
Fazia turismo (fora de Portugal) (20)	○	○	○
Fazia atividades culturais (museu, teatro, cinema, concertos) (21)	○	○	○
Inscrevia-me num curso (22)	○	○	○

Q14 Agora segue-se uma pequena secção que pede dados socioprofissionais apenas para descrição da amostra. Recorde-se que o questionário é anónimo.

End of Block: Regime 5 dias (full-time)

Start of Block: Perfil_5dias

Q15 Género

- Feminino (1)
- Masculino (2)
- Outro (3) _____

Q16 Idade

- 18-24 anos (1)
- 25-35 anos (2)
- 36-45 anos (3)
- 46-60 anos (4)
- Mais de 60 anos (5)

Q17 Qual o nível mais elevado de instrução que completou?

- Até 3º ciclo (9º ano) (1)
- Ensino secundário (12º ano) (2)
- Bacharelato/Licenciatura (3)
- Mestrado (4)
- Doutoramento (5)

Q18 Estado civil

- Solteiro/a (1)
- Casado/a ou União de Facto (2)
- Divorciado/a (3)
- Viúvo/a (4)

Q19 Tem filho(s) menores?

- Sim, quantos? (1) _____
- Não (2)

Q20 Qual o seu vínculo laboral?

- Contrato a termo certo (1)
- Contrato a termo incerto (2)
- Contrato sem termo (3)
- Contrato a tempo parcial (4)
- Contrato de trabalho temporário (5)
- Contrato de prestação de serviços (6)
- Outro. Qual? (7) _____

Q21 Qual a dimensão da empresa?

- Micro (1)
- Pequena (11 a 50 trabalhadores) (2)
- Média (51 a 250 trabalhadores) (3)
- Grande (>250 trabalhadores) (4)

Q22 Qual o tamanho da sua equipa?

_____

Q23 Em que setor trabalha?

- Agricultura e pescas (1)
- Indústria e energia (2)
- Construção e atividades imobiliárias (3)
- Comércio (4)
- Transportes e armazenagem (5)
- Alojamento e restauração (6)
- Informação e comunicação (7)
- Outros serviços(8)

Q24 Exerce funções de chefia?

- Sim (1)
- Não (2)

Q25 Número de anos na função

- 1 a 10 anos (1)
- 11 a 20 anos (2)
- 21 ou mais anos (3)

Q26 Número de anos na organização atual

- 1 a 10 anos (1)
- 11 a 20 anos (2)
- 21 ou mais anos (3)

Q27 Regime de trabalho

- Presencial (1)
- Teletrabalho (2)
- Híbrido (3)

Q28 Como se desloca para o trabalho?

- A pé (1)
- Carro (2)
- Bicicleta/Trotinete (3)
- Transportes públicos (4)
- Outro. Qual? (5) _____

Page Break

Q29 Chegou ao final do inquérito. Muito obrigada pelo seu contributo precioso para esta dissertação de Mestrado!

Maria Neves

End of Block: Perfil_5dias