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Comparing Flexible Working Hours in Northern and Southern Europe: A Methodological Analysis using Individual Survey Data

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Abstract

Our study assesses whether a difference exists in the diffusion of flexible working hours between Northern and Southern European countries. We implemented a methodological approach based on individual workers' survey data, analysing a large sample from the European Working Conditions Survey (EWCS 2015) that includes 17 countries, and applying logistic regression models. We found that a worker in Northern Europe is twice as much likely to use flexible working hours than their Southern Europe counterpart, even after controlling for sociodemographic variables, working conditions, occupations, and sectors. Based on these findings, we argue in favour of the assumption that institutional regimes in Southern Europe feature lower levels of flexibility, putting forward some explanations for their perceived higher flexibility.

Keywords: European Working Conditions Survey; Flexitime; European Countries; Working Day; Working Time.

1. Introduction

Flexible Working Hours (FWHs) have diffused across Western societies in recent times, both in companies and their workforce, especially during the Covid-19 crisis, where environmental conditions and new restrictions

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facilitated the introduction of teleworking and flexible working arrangements.[1] Amongst the different solutions for work flexibility, there is evidence of higher levels of diffusion of FWHs in several Nordic or Western countries (e.g., Sweden, United Kingdom or Canada) and its positive relation with labour productivity[2].

FWHs became a priority issue in Europe, either because of decreasing competitiveness in comparison to other regions of the global economy – i.e., the United States and Southeast Asia – or the need for balancing the significant internal differences within the European continent, i.e. – Northern and Central Europe countries – that report greater economic stability and performance than Southern or Eastern European countries do[3].

The application of FWHs achieved interesting results in promoting work-family life balance, as well as in workers' perception of their welfare[4]. These factors also may have a positive impact on company performance, reduction of workers turnover and risk prevention, within the framework of corporate social responsibility where social and organisational issues are

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[1] E. Dagnino, '*Working Anytime, Anywhere' and Working Time Provisions. Insights from the Italian Regulation of Smart Working and the Right to Disconnect*'. E-Journal of International and Comparative Labour Studies, 2020, vol. 9, n. 3, 1-19.

[2] C. Wallace, *'Work flexibility in eight European countries. A cross-national comparison'*, Czech Sociological Review, 2003, n. 21, 773-794.

A. Vallejo-Peña and S. Giachi, '*The Mediterranean variety of capitalism, flexibility of work schedules, and labour productivity in Southern Europe*', Region: the Journal of ERSA, 2018, vol. 5, n. 3, 21-38.

A. Carvalho Neto, *'Flexible working hour arrangements in Brazil'*, Revista Pensamento Contemporâneo em Administração, 2020, vol. 14, n. 2, 1-17.

[3] G. Meardi, *'Mediterranean capitalism under EU pressure: labour market reforms in Spain and Italy, 2010–2012'*, Warsaw Forum of Economic Sociology, 2012, vol. 3, n. 5, 51-81.

S. Casagrande, and B. Dallago, *'Benchmarking institutional variety in the eurozone: An empirical investigation'*, Economic Systems, 2021, n. 45, 100838.

[4] E. Kossek and L. Van Dyne, *'Face-time matters: A cross-level model of how work-life flexibility influences work performance of individuals and groups'* in K. Korabik (Ed.), Handbook of work-family integration. Academic Press, New York, 2008, 305-330.

J.R. Hayman, *'Flexible work arrangements: Exploring the linkages between perceived usability of flexible work schedules and work/life balance'*, Community, work & family, vol. 12, n.3, 327-338, 2009. C. Gordon, J.A. McMullin and T. Adams, *'Flexible small firms? Why some small firms facilitate the use of flexible workplace policies'*, Canadian Journal of Sociology/Cahiers Canadiens de Sociologie, vol. 40, n. 1, 1-24, 2015. doi: 10.29173/cjs19693

B. Beham, S. Drobnič, P. Präg, a. Baierl, and J. Eckner, *'Part-time work and gender inequality in Europe: a comparative analysis of satisfaction with work–life balance'*, European Societies, vol. 21, n. 3, 378-402. 2019.

interrelated[5]. Considering these results, the adoption of flexible working arrangements seems to be a good strategy to achieve both organisational and workers benefits[6].

However, studies have criticised the impact of FWHs on working conditions. This has been particularly evident in the case of teleworking or working from home. In light of the rapid expansion of telework and the continuing evolution of ICT's, calls for caution and criticisms emerge from different academics.

From an organisational perspective, criticisms of telework focus on aspects such as: (1) difficulties in adjusting workspaces that were designed under the face-to-face model, in addition to the high costs of adapting to new trends in spatial and temporal flexibility; (2) loss of communication, cohesion and commitment of work teams as a consequence of increasing team fragmentation; and (3) increased staff turnover, as specific factors related to job satisfaction are diluted.[7]

From the perspective of workers, criticisms of the flexible working arrangements brought about by teleworking focus on: (1) the feeling of technological omnipresence and invasion of private space; (2) the

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[5] P. Moen and Y. Yu, *'Effective work/life strategies: Working couples, work conditions, gender, and life quality'*, Social problems, 2000, vol. 47, n. 3, 291-326. doi: 10.2307/3097233
J. Hill, J.G. Grzywacz, S. Allen, V.L. Blanchard, C. Matz-Costa, S. Shulkin, S. and M. Pitt-Catsouphes, *'Defining and conceptualizing workplace flexibility'*, Community Work and Family, vol. 11, n. 2, 149-163, 2008. doi: 10.1080/13668800802024678
J. Hill, J.G. Grzywacz, S. Allen, V.L. Blanchard, C. Matz-Costa, S. Shulkin, S. and M. Pitt-Catsouphes, 'Workplace flexibility, work hours, and work-life conflict: finding an extra day or two', *Journal of Family Psychology,* 2010*, vol.* 24, n. 3, 349-358. doi: https://doi.org/10.1037/a0019282 P. Moen, E.L. Kelly, E. Tranby, and Q. Huang, *'Changing work, changing health: can real work-time flexibility promote health behaviors and well-being?'*, Journal of Health and Social Behavior, 2011, vol. 52, n. 4, 404-429. doi: 10.1177/0022146511418979

[6] P. Peters, L. Den Dulk, and T. van der Lippe, *'The effects of time-spatial flexibility and new working conditions on employees' work–life balance: the Dutch case'*, Community, Work & Family, 2009, vol. 12, n. 3, 279-297. doi: 10.1080/13668800902968907. J.C. Messenger, '*Working time and the future of work'*, Future of Work Research Series, Geneva, ILO, 2018.

[7] Yu, R., Burke, M., & Raad, N. (2019). Exploring impact of future flexible working model evolution on urban environment, economy and planning. Journal of Urban Management, 8(3), 447–457. https://doi.org/10.1016/j.jum.2019.05.002
Soga, L. R., Bolade-Ogunfodun, Y., Mariani, M., Nasr, R., & Laker, B. (2022). Unmasking the other face of flexible working practices: A systematic literature review. Journal of Business Research, 142, 648-662. Coelho Junior, F. A., Faiad, C., Barbosa Rego, M. C., & Ramos, W. M. (2020). What Brazilian workers think about flexible work and telework. International Journal of Business Excellence, 20(1), 16. https://doi.org/10.1504/IJBEX.2020.104842

emergence of new forms of work-life conflict associated with the invasion of these spaces; (3) the overburdening of women, as they bear more intensely such work-life balance problems; (4) the lack of technological capacity for digital adaptation in the most disadvantaged groups of workers; (5) the perception of spending too many unpaid hours, given the difficulty of controlling the time spent; (6) atomisation and the generalised loss of social links due to the weakening of work-related networks; and, as a consequence of the above, (7) psychological problems caused by isolation and new pressures from the home: stress, anxiety and depression or burnout.[8]

Regardless of their positive or negative impact of FWHs, and in the face of its growing importance for contemporary work organisation, it is not clear whether the diffusion rates of FWHs differ across European countries and societies. Southern Europe (SE) countries seem to have not achieved the same FWH diffusion rates of Northern Europe (NE) countries, despite the need of the former to improve both labour productivity and work-family life balances. The alleged reasons behind the lower FWH diffusion rate in SE countries are not clear, neither to what extent there is a 'real' under-adoption of such practices within the same occupational or industry sector across NE countries and SE countries[9].

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[8] Greenhill, A., & Wilson, M. (2006). Heaven or hell? Telework, flexibility and family in the e-society: A Marxist analysis. European Journal of Information Systems, 15(4), 379-388. Thornton, M. (2016). Work/life or work/work? Corporate legal practice in the twenty-first century. International Journal of the Legal Profession, 23(1), 13–39. https://doi.org/10.1080/09695958.2015.1093939. Hasan, S. M., Rehman, A., & Zhang, W. (2021). Who can work and study from home in Pakistan: evidence from a 2018–19 nationwide household survey. World Development, 138, 105197. Cosano Ramos, A.; Vallejo Peña, A. y Ortega Gaspar, M. (2022). La satisfacción laboral y personal, la flexibilidad espacio-temporal en tiempos de pandemia. Actas del XIV Congreso Español de Sociología. Grupo 15; 30 de junio de 2022. Disponible en: https://congreso2022.fes-sociologia.com/wp-content/uploads/2022/07/Libro-de-Actas_final_web.pdf. Valoura, L. (2013) Time-Space flexibility and Work. Analyzing the "Anywhere and Anytime Office" in the Entertainment, New Media, and Arts sector. Culture Unbound, 5, 339-360. Peasley, M. C., Hochstein, B., Britton, B. P., Srivastava, R. V., & Stewart, G. T. (2020). Can't leave it at home? The effects of personal stress on burnout and salesperson performance. Journal of Business Research, 117, 58–70. https://doi.org/10.1016/j.jbusres.2020.05.014

[9] M. Kerkhofs, H. Chung and P. Ester *'Working time flexibility across Europe: a typology using firm-level data',* Industrial Relations Journal, 2008, vol. 39, n. 6, 569-585.

J.C. Messenger, *'Working time trends and developments in Europe'*, Cambridge Journal of Economics, 2011, vol. 35, n. 2, 295-316. J.M. Carcedo, F.G. Belenguer-Campos. and V.B. Álvarez-Carrasco, *'Flexibilidad del tiempo de trabajo en España: ¿Ha alterado la crisis el comportamiento del empleo a tiempo parcial?'*, Estudios de economía aplicada, 2012, vol. 30, n.

In this article, we present the findings of a research that aimed to analyse whether SE countries really have lower diffusion rates of FWHs in comparison to NE countries, using a worker-level approach that allowed to compare (at a quite general level) similar occupational categories and economic sectors of activity. We estimated to what extent working in a SE country reduces the likelihood to use FWHs in comparison to workers in NE countries. With our worker-level approach, we avoided the risk of 'ecological' fallacy related to a country-level or sector-level of analysis, and we observed whether a worker used FWHs within a country controlling for contextual variables like economic sector or occupation, as well as by workers' individual characteristics. After a brief review of our research problem and the relevant literature, we present the methodology of our study and the results of the application of multiple regression models to a large dataset from the European Working Conditions Survey-2015[10].

2. Theoretical Framework

2.1. Conceptualising FWHs

Flexible working arrangements aim to promote flexibility in job localisation, work schedules and the amount of time spent at the workplace, pursuing sharing benefits for companies and their workers[11]. The essential aspects to be regulated by flexible working arrangements can be summarised in three questions: When? Where? For how long?[12].

1, 209-236. H. Chung, and K.Tijdens, *'Working time flexibility components and working time regimes in Europe: using company-level data across 21 countries'*, The International Journal of Human Resource Management, 2013, vol. 24, n. 7, 1418-1434. D. Holman, *'Job types and job quality in Europe',* Human Relations, 2013, vol. 66, n. 4, 475-502. S. Gialis and L. Leontidou, *'Antinomies of flexibilization and atypical employment in Mediterranean Europe: Greek, Italian and Spanish regions during the crisis'*, *European Urban and Regional Studies,* vol. 23 n. 4, 716-733, 2016. H. Chung, and T. Van der Lippe, *'Flexible working, work–life balance, and gender equality: Introduction'*, Social Indicators Research, 2018, n. 151, 1-17. A. Carvalho Neto, *'Flexible working hours arrangements in Brazil'*, Revista Pensamento Contemporâneo em Administração, 2020, vol. 14, n. 2, 1-17.

[10] Eurofound, *European Working Conditions Survey* [dataset], 2015, available from: http://www.eurofound.europa.eu [Accessed 11 Nov 2020].

[11] E.J. Ko, and S.S. Kim, *'Intention to use flexible work arrangements: The case of workers in Korea and gender differences in motivation'*, Journal of Organizational Change Management, 2018, vol. 31, n. 7, 1438-1460. https://doi.org/10.1108/JOCM-01-2018-0001

[12] J. Hill et al. *Opus citatio.*

Following the criteria of the Georgetown University's Law Center[13], the main forms of flexible working arrangements are:

- Flexibility in working hours (including flexitime).
- Flexibility in managing the total number of worked hours.
- Flexibility regarding the workplace.
- Flexibility in the management of leaves (maternity, paternity, unpaid leave, etc.).

Our research focuses only on the flexibility in working hours (first category), which includes both flexitime (i.e., the possibility of changing/adapting the entry and exit time schedules at work) and flexibility in managing the total number of (daily) worked hours.
This category could be further split according to who receives the benefit from flexibility, the company, or the worker. The former is called 'passive flexibility' or 'employer-oriented flexibility'[14]: the company adapts working hours according to the market demands and conjunctures[15]; the latter are labelled as 'worker-oriented flexibility', which (should) foster workers' satisfaction and motivation through the improvement of work-family conciliation[16]. However, we did not include these differences into the analysis because of our dataset's limitations and because they exceed the scope of our research.

[13] J. Hill et al. *Opus citatio*.
[14] C. Fagan, C. Lyonette, M. Smith and A. Saldaña-Tejeda, *The influence of working time arrangements on work-life integration of "balance": A review of the evidence*, Conditions of Work and Employment, 2012, Series n. 3, Geneva, International Labour Office. H. Chung Heejung, K. Tijdens, *'Working time flexibility components and working time regimes in* Europe: *using company-level data across 21 countries'*. The International Journal of Human Resource Management, 2013, vol. 24, n. 7, 1418-1434. J.C. Messenger. *Opus Citatio*.
[15] A. Corominas, A. Lusa, R. Pastor, *'Using a MILP model to establish a framework for an annualised hours agreement'*, European Journal of Operational Research, 2007, vol. 177, n. 3, 1495-1506.
[16] D. Jijena-Michel and C. Jijena-Michel, *'El rol moderador de la flexibilidad del horario de trabajo en la relación del enriquecimiento trabajo familia y la satisfacción docente'*, Horizontes Empresariales, 2015, vol. 10, n. 2, 41-56. S. Lewis, 'Flexible Working Arrangements: Implementations, Outcomes and Management', In C. Cooper and I. Roberts, (eds.) *Annual Review of Industrial Psychology*, 18, Wiley, New York, 2003, 1-28.

2.2. Institutional Factors and Cross-country Variations of Flexible Organisation

The literature suggests that the diffusion of FWHs depends essentially on the characteristics of the institutional context, as well as the companies and the workers[17]. For instance, organisations offering more high-skilled jobs are more likely to implement FWHs[18]. In addition, the possibility to implement policies on a large scale on a larger workforce is an essential factor for implementing a culture of flexibility[19].

The neo-institutionalist perspective[20] highlighted the influence that the institutional regime has on organisational behaviour[21]. These scholars showed that organisations within the same country share the same regulatory framework and bear the same institutional pressures, with direct consequences on human resources practices and the day-to-day life of the workers. For instance, the large empirical study by Hill *et al.* [22] suggests that culture influences the implementation of flexible working arrangements in organisations, since the sample of Asian countries showed some degree of resistance to carry out certain tasks in a place other than the organisation's own headquarters, consistently with their collectivist culture attitude.

Scholars in this area created several models for classifying European countries according to their institutional regime[23]. For instance, Esping-Andersen argued that the State is the major social provider in social

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[17] L. Golden, *'Limited access: Disparities in flexible work schedules and work-at-home'*, Journal of Family and Economic Issues, vol. 29, n. 1, 86-109, 2008. G.I. Kassinis and E.T. Stavrou, *'Non-standard work arrangements and national context'*, European Management Journal, 2013, vol. 31, n. 5, 464-477.

[18] D. Holman, *'Job types and job quality in Europe'*, Human Relations, 2013, vol. 66 n. 4, 475-502. D. Wheatley, *'Employee satisfaction and use of flexible working arrangements'*, Work, employment and society, 2017, vol. 3, n. 4. 567-585.

[19] S. Sweet, M. Pitt-Catsouphes, E. Besen and L. Golden *'Explaining organizational variation in flexible work arrangements: Why the pattern and scale of availability matter'*, Community, Work & Family, 2014, vol. 17, n. 2, 115-141. A. Carvalho Neto, *Opus citatio.*

[20] (i.e.) P. J. DiMaggio. and W.W. Powell, *'The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields',* American sociological review, 1983, vol. 48, n. 2, 147-160. W.R. Scott, *Institutions and organisations*, Sage Publications, Thousand Oaks CA, 1995.

[21] D. Holman, *Opus citatio*.

[22] J. Hill et al., *Opus citatio*.

[23] K. Wall, *'Leave policy models and the articulation of work and family in Europe: a comparative perspective',* International review of leave policies and related research, 2007, n. 100, 25-43. D. Holman, *Opus citatio*.

democratic countries – especially Scandinavian ones – as well as in those with a socialist tradition, with somewhat less support in more conservative welfare states, like Germany and those countries under its influence, and even less in Mediterranean countries, being societies, which transfer a large part of the welfare responsibility to families[24]; by contrast, the countries of the liberal model (e.g., United Kingdom) pursue a well-functioning market to have a positive impact on social welfare[25].
Following a similar approach, Guillén[26] explains the conflicts in the organization of work and labour relations in each country according to their institutional tradition, as determined by its historical processes. Hall and Soskice[27] also highlight the importance of national institutions in the development of the economic structure and in the regulation of labour relations. The varieties of capitalism approach underlie historical reasons which, in turn, have implications for value and belief systems of whole countries and territories. This approach has led to the identification of a peculiar 'Mediterranean' variety of capitalism and governance[28].

2.3. Varieties of Capitalism and Flexible Working Hours

The 'Varieties of Capitalism' perspective suggests that the different institutional regimes of NE countries and SE countries could explain the different types of policies and strategies for FWHs undertaken in those countries. For the case of European countries, Chung and Tijdens[29] showed that companies located in SE countries show a lower likelihood to adopt FWHs, in comparison with NE countries and several Central European countries. Similarly, Messenger[30] found that SE countries have less workers in part-time employment and that this type of workers are more likely to have FWHs.

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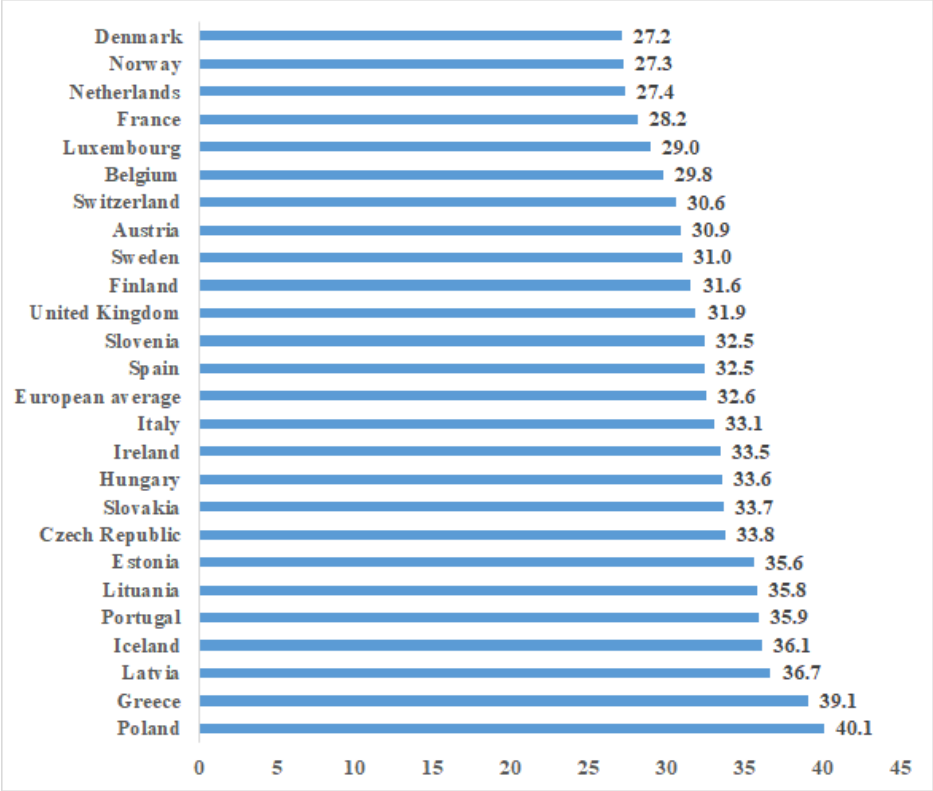
[24] G. Esping-Andersen, *The three worlds of welfare capitalism*, Princeton University Press, Princeton, 1990.
[25] *Ibíd.* G. Esping-Andersen. M. Ferrera, *'The 'Southern model' of welfare in social Europe'*, Journal of European social policy, 1996, vol 6, n. 1, 17-37. B. Amable, *The diversity of modern capitalism*, Oxford, Oxford University Press, 2013.
[26] M. Guillen, *Models of management: work, authority, and organization in a comparative perspective*, University of Chicago Press, Chicago, 1994.
[27] P.A. Hall and D. Soskice, *Varieties of capitalism: The institutional foundations of comparative advantage,* Oxford University Press, Oxford, 2001.
[28] Ferrera, *Opus citatio*.
[29] Chung and Tijdens, *Opus citatio*.
[30] Messenger, 2011, *Opus citatio*.

An explanation of these findings can be related to studies[31] that found a relation between the 'institutional regime' and work flexibility. Namely, NE countries (including Scandinavian and Liberal regimes) and, to a less extent, countries with a Continental-Corporatist model, show higher flexibility rates and more worker-led orientation than SE countries do.
On the other, a lower flexibility in working time schedules of SE countries has been observed[32], according to the predictions of the 'Mediterranean' variety of capitalism. Similarly, Chung and van der Lippe[33] found that Mediterranean countries show a lower proportion of workers with schedule control and teleworking in comparison to Liberal, Continental, and, especially, Scandinavian countries. In short, the specificities of the institutional regime of each country/group of country determine the likelihood of adopting FWHs.
During the last economic recession (2008-2015), real worked hours increased in Southern Europe and get a higher average than in the North (Figure 1). Two SE countries are among the five countries with the highest numbers of worked hours in Europe: Greece is 2nd with 39.1 hours (only surpassed by Poland), while Portugal is 5th with 35.9 hours; Italy and Spain are close to the average (33.1 and 32.5, respectively), although far from the values of the NE countries. All the NE countries are in the top ten of this classification (except Iceland), with Denmark (27.2), Norway (27.3) and the Netherlands (27.4) showing a good performance due to the low number of worked hours.

[31] Kerkhofs *et al., Opus citatio*.
[32] Vallejo-Peña and Giachi, , *Opus Citatio*.
[33] Chung and van der Lippe, *Opus citatio*.

Figure 1. Average weekly worked hours in OECD European countries (2015)



Source: OECD (2017); own elaboration

Recent analyses of EWCS data showed that SE countries have more rigid working hours than NE countries and found a positive correlation between such 'rigidity' and the amount of worked hours[34]. These findings suggest that the rigidity of working hours would hinder the possibility of reducing the number of working hours and, therefore, increasing productivity and other performance and well-being indicators. A possible explanation of these interrelations can be found in the recent history of the labour market dynamics of these countries.

[34] Vallejo-Peña and Giachi, *Opus citatio*.

2.4. Transformation of the Labour Markets in SE Countries

In South Europe, the government-trade union negotiations during the 1980s and 1990s secured the jobs of a large part of the population, leaving large social groups in precarious employment, being the unemployment rates highest amongst the youth and women[35]. Those negotiations generated a fragmented economic model of employment, in which the public administration gradually reduced its capacity as an employer. Similarly, industrial relations in countries such as Italy and Spain during the 1990s were characterised by workers and their representatives' reluctance to adopt FWHs, considered as an advantage for companies in their struggle of interest, while workers and trade unions prioritised employment protection as a strategy to generate stability[36].

The historical tendency to overload working time was compounded by the economic crisis of 2008, given the consequent social cuts in public spending in Greece, Spain, and Portugal. These cuts caused a fall in wages and a loss of contract stability, in a context of unbalanced negotiation, and they led to a culture of (more) rigid labour relations and distrust between government, employers and trade unions (Leonardi *et al.* 2011). This resulted in an institutional climate that hinders the establishment of flexibility as a driving force of the economy.

FWH policies in SE countries during the 2008-2015 economic recession led to a loss of job security and the application of contractual formulas that were detrimental to weak social groups (the youth, immigrants, and women), and prioritised companies' interests[37]. Moreover, the pressure of the crisis has increasingly pushed workers into atypical jobs, to the detriment of their stability and career development, and augmenting flexibility and practices rooted in the informal and shadow economy[38].

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35 F. Miguélez, and C. Prieto, *'Transformaciones del empleo, flexibilidad y relaciones laborales en Europa'*, Política y Sociedad, 2009, vol. 46, n. 2, 275-287. P. Robert, E. Saar and M. Kazjulja, *'Individual and institutional influences on EU labour market returns to education: a comparison of the effect of the 2008 economic crisis on eight EU countries'*, European Societies, 2020, vol. 22 n. 2, 157-187, 2020.

36 L. Leonardi, A. M. Artiles, O. Molina, D. Calenda, and P.C. Oto, *'¿Es exportable la flexiseguridad? Un estudio comparado de Italia y España'*, Cuadernos de Relaciones Laborales, 2011, vol. 29, n. 2, 417-443. https://doi.org/10.5209/rev_CRLA.2011.v29.n2.38022

37 P. Barbieri, and S. Scherer, *'Labour market flexibilization and its consequences in Italy'*, European sociological review, vol. 25, n. 6, 677-692. 2009.

38 Gialis and Lentidou, *Opus citatio*.

In sum, the weaknesses of SE labour markets lead to rigid formulas that protect workers' employment and wages in the short term. By contrast, in Central and Northern Europe, countries adopted opener approaches towards FWHs in negotiations, resulting in a better adaptation of conservative and social democratic models, and achieving some favourable outcomes for companies and workers during the 1990s and early 2000s[39]. Subsequent findings[40] reinforced this evidence, showing that institutional commitment to Welfare State increases the likelihood of the application of FWHs at the company level. They also observed that diffusion of FWHs is higher in large organisations rather than in small ones. Both factors would contribute to explain the lower diffusion of FWHs in SE countries in comparison to NE countries.

2.5. Research Hypothesis

Following the theoretical framework provided above, we expect that working in a SE country significantly reduces the likelihood of the worker to have FWHs. However, we want to check whether this relation is maintained if we include a set of control variables on working conditions and other characteristics of the workers: economic sector, occupation, educational level, amount of worked hours, and basic sociodemographic variables. In other words, we aim to check whether the relation between the country of residence and having FWHs is spurious or not.

3. Methodology

The study uses data from the 6th wave of the European Working Condition Survey (EWCS, 2015)[41] on a representative sample of workers in each European country (n=45,000 workers). The EWCS is one of the best sources of information for the generalised study of labour flexibility in countries like Spain[42]. We included only the last wave to limit the temporal scope of the research and then avoid biases due to recent

[39] See: C. Wallace, *'Work flexibility in eight European countries. A cross-national comparison'*, Czech Sociological Review, 2003, n. 21, 773-794. A. Carvalho Neto, *Opus citatio*.

[40] L. Den Dulk, S. Groeneveld, A. Ollier-Malaterre and M. Valcour *'National context in work-life research: A multi-level cross-national analysis of the adoption of workplace work-life arrangements in Europe'*, European Management Journal, 2013, vol.3, n. 5, 478-494.

[41] Eurofound, *Opus citatio*.

[42] F.J. Pinilla García and A. López Peláez, *'The Intensification of Work in Spain (2007-2011): Teamwork and Flexibility'*, Revista Española de Investigaciones Sociológicas, 2017, n. 160, 79-94. doi: http://dx.doi.org/10.5477/cis/reis.160.79. Robert *et al., Opus citatio*.

developments in the countries included into the sample.
The territorial scope of the research refers to the distribution of European countries based on both geographical criteria and productivity levels that are interrelated according to the literature review. We got the following blocks of countries:

- NE countries: Austria, Belgium, Denmark, Finland, Germany, Ireland, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom
- SE countries: Greece, Italy, Portugal, and Spain. We analysed this block in detail, estimating the effects for each country separately in each model.

The final sample including only the above-mentioned countries is 22,389 workers. If we include only those cases that have no missing values for the dependent variables of our analysis, the size of the final sample drops to 21,512, 22,389, and 21,485 respectively for each logistic regression model. To measure the dependent variables, we used two basic components of the flexibility of working hours: whether the number of hours worked change by day, and whether the times of entry and exit to work change by day[43]. According to this, we used the following indicators:

- The respondent works the same number of hours every day (item Q39_a of the questionnaire): Yes/no
- The respondent gets fixed schedules for entering and leaving work (item P39_d of the questionnaire): Yes/no

These indicators allow to identify the factors related to different component of the flexibility of working hours on a day-to-day base. By crossing these indicators, we get two binary variables that represent summary indexes of flexibility (Table I):

- 'Very rigid working hours': A variable clustering workers who both work the same number of hours every day and have fixed starting and finishing times (recoded as Q39ad_REC_1)
- 'Very flexible working hours': A variable clustering workers who neither work the same number of hours every day, nor

[43] Holman, *Opus citatio*. Messenger, *Opus citatio*.

have fixed work entry nor exit times (recoded as Q39ad_REC_2)

Table I. Variables

CODE	CONTENT OF THE ITEM	SCALE/CATEGORIES
Dependent variables		
Q39a	Working the same number of hours every day	Yes/No
Q39d	Working with a fixed entry and exit schedule	Yes/No
Q39ad_REC_2	Very flexible working hours ('No' in both Q39a and Q39d)	Yes/No
Q39ad_REC_1	Very rigid working hours ('Yes' in both Q39a and Q39d)	Yes/No
Independent variable		
COUNTRY	Living in a Southern European country	Yes/No (and which: Greece, Italy, Portugal, or Spain
Control variables		
Q2a	Sex	Man/Woman
Q2b	Age	15-91
Q7_lt	Self-employed	No/Yes
Q24	Number of worked hours every week	1-168
Q26	Number of worked days every week	1-7
Q39b	Working the same number of days every week	No/Yes
Q39c	Working the same number of hours every week	No/Yes
nace_r1_lt_4	Sector of economic activity	Agriculture, Industry, Services, Public sector
CREAT_OCC	Creative occupation	No/Yes
EDUCATION	Level of educational attainment	Secondary (1st level) or lower; Secondary (2nd level); Between Secondary and Tertiary; Tertiary

Source: EWCS (2015); own elaboration.

The aim of the analysis is to determine whether there is a robust, significant, and negative correlation between working in a SE country and

having flexible working hours, controlling the potential effect of other variables. As independent variable, we used the binary variable about the distribution of workers among NE countries and SE countries. As control variables, we used sociodemographic features which may be related to different positions and status within organisations or professional careers, like age, or issues of work-life balance, maternity, and part-time work, like gender. We also considered features of work like the distinction between self-employed workers and employees, since the former is associated with higher levels of time flexibility, as well as the level of formal education.
The sector of the economy and the type of occupation may be important to explain both the content of work and productivity levels. For the occupational category we used the concept of 'creative occupations' as originally understood in the work of Florida[44] on the labour market in the United States and its subsequent applications to European countries[45]. The concept of creative occupations facilitates the distinction between occupations based on criteria of creativity and flexibility from the rest.[46]
Finally, we included features related to the flexibility of working hours on a weekly scale are considered instead of on a daily base[47], like the number of hours worked per week and the number of working hours per week, as well as whether the interviewee works the same number of hours and days every week (Table I).

4. Findings

4.1. Descriptive Analysis

Table II shows how the dependent variables about FWHs differ between NE and SE countries. Cramer's index V shows that there are significant cross-country differences and between the NE and SE blocks as well. In the first case, all the V-indices obtained are above 0.1 and statistically significant, with over 99.9% confidence; in the second case, the V-indices are somewhat lower, but still significantly different from 0 with a high

[44] R. Florida, *The Rise of the Creative Class,* Basic Books, New York, 1996.
[45] R. Florida and I. Tinagli, I. *Europe in the creative age,* Carnegie Mellon Software Industry Center and Demos, Pittsburgh and London, 2004.
[46] These Authors include among the creative occupations the following categories: management and executives (ISCO 12-13), liberal arts and professionals (ISCO 21-24) and some of the occupations classified in the section of technicians and associated professionals (ISCO 31-34).
[47] Messenger, 2011; 2018, *Opus citatio*.

degree of reliability. The most significant cross-country differences (and between North and South blocks) relate to the proportion of workers in each country who:

- Work for a variable number of hours.
- Have very flexible working hours.

Consistently to our research hypothesis, NE countries show a higher proportion of workers with FWHs and a significantly lower proportion of workers with 'very rigid' working hours. No country in the North ranks below any country in the South in terms of the proportion of workers with a flexible number of hours worked every day, nor in the proportion of workers with 'very flexible' working hours, while there are a few exceptions in the case of starting and finishing times, concerning Germany, Luxembourg and Switzerland, whose values are comparable to those of some countries in the South. Similarly, no country in the North is above any country in the South in terms of the proportion of workers with 'very rigid' working hours. In summary, the differences between NE Europe in terms of work time flexibility are consistent.

Table II. Flexibility of Working Hours between Northern and Southern Europe

	% of workers with flexible number of working hours each day	% of workers with flexible entry and exit schedule	% of workers with 'very flexible' working hours	% of workers with 'very rigid' working hours
North	**49.1%**	**41.9%**	**32.8%**	**41.9%**
Austria	58.6%	51.8%	41.3%	30.9%
Belgium	46.4%	40.9%	30.7%	43.4%
Denmark	70.2%	48.7%	40.8%	21.9%
Finland	57.7%	55.4%	45.3%	32.5%
France	51.1%	39.6%	31.1%	40.5%
Germany	45.7%	37.7%	30.2%	46.9%
Ireland	43.8%	43.0%	33.6%	46.8%
Luxemburg	40.0%	36.9%	25.1%	48.2%
Netherlands	52.4%	51.7%	40.3%	36.2%
Norway	49.1%	40.3%	32.0%	42.6%
Sweden	60.0%	43.8%	35.5%	31.8%
Switzerland	46.1%	34.7%	30.0%	49.2%
United Kingdom	43.1%	43.4%	32.8%	46.4%
South	**33.8%**	**34.9%**	**25.4%**	**56.7%**
Greece	37.7%	36.9%	28.1%	53.5%
Italy	36.9%	38.5%	29.2%	53.9%
Portugal	31.5%	38.5%	24.6%	54.6%
Spain	33.4%	31.0%	23.4%	59.0%
TOTAL	**44.3%**	**39.4%**	**30.4%**	**46.8%**
N	22365	22347	22333	22333
Cramer V (all countries)	0.190***	0.130***	0.191***	0.126***
Cramer V (north vs South)	0.140***	0.078***	0.142***	0.081***

Source: EWCS (2015); own elaboration.

The NE countries with the highest proportion of workers with FWHs are Austria, Denmark, Finland, the Netherlands and, somewhat further away, Sweden (Table II). In particular, Austria, Finland, and the Netherlands also show a high proportion of workers with flexible starting and finishing times, while Austria, Denmark, Finland and Sweden show a low proportion of workers with very rigid working hours. Among SE countries, Spain shows the highest proportion of workers with rigid working hours according to all indicators, followed very closely by Portugal which has even fewer workers with a variable number of hours every day. In contrast, Italy and Greece show similar values to each other and are somewhat closer to the European average.

4.2. Multivariate Analysis

This section shows the results of the estimation of logistic regression models to find out whether the above-mentioned cross-country differences about the flexibility of working hours stand after including control variables that potentially influence the rigidity or flexibility of working hours. In particular, we used binary logistic estimators following a 'backwards' estimation procedure, i.e., first including all the variables in the analysis and then excluding those variables whose effect was not significant, in a sequential manner. A probability threshold of 5% was used for the input and 10% for the elimination of variables during the estimation process. This process has been stopped at the 4th or 5th step for the variables Q39a and Q39ad_REC_1, respectively, while it has been stopped at the 1st step for Q39d and at the second step for Q39ad_REC_2.

Table III shows the final model obtained for each of the four dependent variables. Each model contains the values of the exponential transformation of the coefficient of each variable that eventually entered into the final model, i.e. the odds ratio indicating the effect of the variable on the probability that the dependent variable will take place.[48] Each

[48] If a variable is not included into the final model, its lack of significance has been indicated by the acronym N.I. (Not Included). Those variables labelled as N.S. (Not Significant) have been included in the final model but have no (at least) 95% significance (for individual variables, the input threshold is 90%). The primary sector (agriculture, etc.) is the reference category for the economic sector variable and the category '1st stage of secondary education (or lower)' is the reference category for the educational attainment level. We used the block of NE countries as the reference category for the independent variable to isolate the context effect of the SE countries.

model also contains a series of information and reliability indexes like sample size, Chi-test, the Hosmer and Lemeshow test, how much -2log likelihood changes between models, the Cox and Snell's or Nagelkerke's R-square indexes and the overall percentage of right predictions (Table III).[49]

Table III. Logistic Regression Analysis of the Daily Flexibility of Working Hours

	Flexible number of working hours each day	**Flexible entry and exit schedule**	**'Very flexible' working hours**	**'Very rigid' working hours**
Variables	**Exp(B)**			
North country	***	***	***	***
Greece	0.493***	0.614***	0.575***	2.034***
Spain	0.493***	0.585***	0.579***	2.125***
Portugal	0.385***	N.S.	0.561***	1.657***
Italy	0.589***	N.S.	N.S.	1.608***
Women	N.I.	0.850***	0.835***	N.I.
Age	N.I.	N.S.	1.003*	N.I.
Self-employed	2.457***	2.831***	3.166***	0.391***
# worked hours	0.994***	1.005***	N.I.	N.I.
# worked days every week	N.I.	1.058**	1.080***	N.I.
Not working the same # days every week	1.297***	1.515***	1.409***	0.646***
Not working the same # hours every week	16.800***	6.495***	13.398***	0.075***
Agriculture	***	***	***	***
Industry	0.557***	0.521***	0.529***	1.950***

[49] Table A1 in the Annex shows the changes in model's -2log likelihood related to the elimination of each variable in the last step of each model. In other words, these values indicate the overall effect that each variable would have on the explanatory capacity of each model. However, the values associated with each variable between different models are not comparable, because each model is characterized by a different number of variables and categories included in the last step. Therefore, we suggest comparing the contributions of each variable within the same model.

Services	0.743***	0.664***	0.695***	1.469***
Public sector	0.862	0.499***	0.530***	1.397***
Creative occupations	1.469***	1.611***	1.649***	0.640***
Primary/secondary education	***	***	***	***
Superior secondary education	N.S.	N.S.	N.S.	N.S.
Between secondary and tertiary education	N.S.	N.S.	N.S.	0.824***
Tertiary education	1.584***	1.358***	1.363***	0.612***
Constant	0.220***	0.206***	0.085***	1.780***
Statistics	**Model information (last step)**			
N	21512	21493	21485	21485
Chi-test	9668.983***	6665.137***	8809.600***	8410.580***
Hosmer and Lemeshow	77.227***	72.371***	54.553***	70.261***
-2log likelihood	19929.236	22232.856	17664.803	21230.110
R2 Cox y Snell	0.362	0.267	0.336	0.324
R2 Nagelkerke	0.484	0.361	0.475	0.433
% right predictions (global)	80.4 %	75.8 %	81.5 %	76.4%

Source: EWCS (2015); own elaboration

Findings show that the negative correlation between working in SE and working hours flexibility stands in all the estimated models, despite other variables show a high correlation with the dependent variables, excepting one variable for Italy and another one for Portugal (Table III). Working in a SE country would approximately double the likelihood of having very rigid working hours and, in contrast, would reduce by 50% the likelihood of working a flexible number of hours every day, *ceteris paribus*.

Similarly, the likelihood of having flexible entry and exit schedules and very flexible working hours would be reduced by 38.6% and 41.5% respectively for Greece and Spain, whereas we did not observe any significant relation for Italy or Portugal in this case (Table III). However,

the observed relations are quite high, stand in almost all models and are statistically significant, with more than 99.9% likelihood.
Furthermore, there are no big differences due to gender or age (Table III). Being a woman reduces by 15% the likelihood of flexible entry and exit schedules, and by 16.5% the likelihood of very flexible working hours, while age increases very slightly the likelihood of having very flexible working hours (0.3% per year). The educational attainment level does not seem to be important, excepting the tertiary education category, which increases by 35-59% the likelihood of FWHs (depending on the indicator) and reduces by 38.8% the likelihood of very rigid working hours.
We found several significant relations in the variables related to work (Table III). Self-employed people double and even triple the likelihood of FWHs while reduce the likelihood by less than half (60.9%) of having very rigid working hours. The sector of economy is significant too: in general, working in a sector other than agriculture would have a negative effect on work time flexibility, and this effect is particularly high for the industry and the tertiary sector. The type of occupation is significant too: working in a creative occupation (managers, scientists, liberal professions, specialised technicians, artists, sportsmen, etc.) would increase by 47-65% the likelihood of FWHs while reduce by 36% the likelihood of very rigid working hours.
Other aspects of work time flexibility have significant effects. Flexibility regarding the number of days of work in a week increases the likelihood of having FWHs (especially of flexible entry and exit schedules) and reduces the likelihood of having very rigid working hours. Flexibility regarding the number of hours worked per week show a very high correlation with the flexibility of working hours and, in particular, with the likelihood of working a variable number of hours every day. By contrast, the overall amount of time spent on the job has limited effects:

- The number of worked hours slightly reduces the likelihood of working a variable number of hours, but it increases slightly the likelihood of flexible work entry and exit times.
- The number of worked days slightly increases the likelihood of flexible starting and finishing times and very flexible working hours.

Despite the existence of these high and significant effects, we recognised that the country of residence stands as a strong factor in explaining the likelihood of having FWHs.

5. Discussion

We expected that working in a SE country significantly reduces the likelihood to have FWHs in comparison to workers located in NE countries. Applying logistic regression models to survey data from the 2015-EWCS, we checked the supposed relation between country of residence and having FWHs, controlling by a set of variables on working conditions and other characteristics of the workers, like economic sector, occupation, education, amount of worked hours, and basic sociodemographic variables.

We found that NE countries show a higher proportion of workers with FWHs and a significantly lower proportion of workers with rigid working hours. No country in the North ranks below any country in the South in terms of flexibility in the number of daily worked hours, and this also applies for the indicators on starting and finishing times, with a few exceptions. Therefore, it seems that the differences in terms of FWHs between the North and the South are clear: working in a NE country would almost double the likelihood of having very flexible working hours than in a SE country. For example, it would approximately double the likelihood of working a flexible number of hours every day, *ceteris paribus*. These effects seem somewhat higher and more frequent for Greece and Spain than for Italy and Portugal. Furthermore, some control variables seem to be important to explain the flexibility of the working hours. While job or occupational variables seem to be influential, sociodemographic variables do not.

Our contribution is important because, using a worker-level methodological approach, we showed that working in a SE country reduces the likelihood of the worker to have FWHs in comparison to a NE country, *ceteris paribus*. Our findings reinforce the idea of the existence of a 'context effect' due to the country of residence that is not conditioned by the sectoral composition of the economy because this is variable has been (at least, partially) controlled in the analysis.

Following our theoretical review, we assume that the institutional regime of the country of residence should have a determining influence on the flexibility of the working hours which, in turn, would condition performance indicators like labour productivity, work-family life balance, and overall socioeconomic well-being. In short, a neo-institutionalist perspective provides an explanation for the existing link between country of residence and uneven diffusion rates of FWHs, through the influence of regulation, labour policy, collective bargaining traditions, and the labour market characteristics.

Our research has several limitations. While most of them are related to the availability and granularity of the variables available in the EWCS, an important limitation has to do with the difference between formal economy and shadow economy. Our data only refer to workers employed within formal organisations in the 'visible part' of each national economy. However, we were not able to observe the labour conditions of people working in the irregular (shadow, black, criminal) economy, nor the influence of the informal economy on FWHs and similar dynamics. This influence can be important for the economies of SE countries, and even more following the consequences of the recent post-2008 economic recession.

As showed in the theoretical review section, the consequences of the crises could have boosted even further flexible working conditions in Southern societies through 'atypical' or precarious jobs, often at the interplay of the irregular and informal economy. This could generate a 'phony' perception of greater flexibility of the labour market in SE countries, as well as the higher seasonality of some of their economic sectors (i.e., tourism, agriculture, etc.).[50]

In any case, our findings showed that even if all these differences may exist, there is also a 'context effect' likely due to the institutional regime of the country of residence. If we expect that work flexibility increased in SE countries during the post-crisis years. So, our findings are even more important because we showed that SE countries have a lower rate of FWHs than NE countries following the economic recession.

[50] In any case, as pointed out by Barbieri and Scherer (2009), atypical jobs are often characterised by 'rigid' work schedules instead of flexible ones. In this sense, there is no contradiction between our argument/findings and the increasing of atypical jobs in SE countries.

Annex

Table A1. Logistic regression analysis of the daily flexibility of working hours; changes in the model's likelihood after eliminating the variable

	Working a flexible number of hours each day (Step 4)	**Working with flexible entry and exit schedule (Step 1)**	**'Very flexible' working hours (Step 2)**	**'Very rigid' working hours (Step 5)**
Country	290.238	124.698	116.781	293.843
Woman		20.194	19.439	
Age		3.737	4.063	
Self-employed	270.103	437.740	466.132	296.464
# worked hours	16.287	8.888		
# worked days every week		6.465	14.677	
Not working the same # days every week	24.179	81.952	51.995	62.371
Not working the same # hours every week	5058.878	2461.323	4264.856	4009.407
Sector	79.495	91.650	68.479	70.183
Creative occupations	78.021	136.955	116.240	115.842
Level of educational attainment	88.316	70.733	65.573	110.015

Source: EWCS (2015); own elaboration

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