Accommodating Employees with Disabilities: The Role of Flexible Employment Schemes in Europe

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Abstract

Over the past 30 years, the workplace has witnessed significant changes. The fast growth in the use of information technology, changes in working hours and agreements radically changed the nature of job. One such change is the flexible employment schemes, which can provide alternatives for employees with disabilities, giving incentives to increase their productivity and their job satisfaction. The aim of this study is to examine the impact of those schemes on job satisfaction, job quality and absenteeism in this group of people. Furthermore, the objective is to explore the role of flexible employment to carers of disabled people. The empirical analysis relies on the European Working Conditions Survey over the period 2000-2015. The results show a positive impact on both disabled workers and carers' job satisfaction and lower incidence of absenteeism at work. The policy recommendations and implications are further discussed.

1. Introduction

In all societies around the world, physical and mental impairment is a prevalent occurrence. At any time in life, a large proportion of a country's population may experience a temporary or permanent impairment. Additionally, disability transfers the responsibility to the non-disabled family members or friends who are responsible for their support and caring (Zola, 1989; Ferguson, 2001; Mishra and Gupta, 2006). According to the World Health Organisation (2011), roughly 1,000 million individuals in 2010 – 15% of the world population – had some type of disablement. Managers, jobs and companies are facing an increasingly diverse workforce, which includes a substantial amount of physically and mental disabled, but is widely and often overlooked (Lorbiecki and Jack, 2000; Lengnick-Hall et al., 2008). While in the past various solutions were provided to people with impairments, the result of those solutions was a segregation, such as special schools. Policy has changed nowadays, in an effort to help disabled people to integrate in the education system and employment and to enhance social inclusion.

The aim of this study is twofold. First, to investigate the role of flexible employment schemes on disabled people's' job satisfaction, absenteeism and job quality. While there is a gap of the job quality, and especially in wage gap, between disabled and non-disabled workers, we aim to explore the gaps between people in flexible and non-flexible employment schemes for the disabled group. As it is expected that there are inequalities between healthy people and people with physical and mental impairments, the aim of extending the analysis to the group of disabled people is to examine whether the flexible employment schemes improve the job quality. Another major outcome we explore is the absenteeism in work. While traditional employment schemes can be more efficient for people with no impairments, this may not hold for disabled workers, as flexibility would improve their accessibility to work and decrease their absenteeism.

Second, we aim to explore the impact on the job satisfaction of carers looking after a disabled family member who cannot cope without their support. Balancing employment with caring can be quite challenging causing reduction of working hours or giving up their job. This has a cost to both the carer-worker and the employer. It is costly to the carer, who can lose the financial security, and to the employer who may lose the skills and experience of those workers and the additional costs needed to recruit other personnel to replace them. The costs are likely to be extended to the wider economy, as the job loss may lead to productivity reduction and loss of tax revenues from people

who are willing to work, but are unable to do so due to caring responsibilities. Flexible employment schemes may provide a solution to this issue and help carers to cope with their job and caring responsibilities improving their work-life balance. The empirical analysis relies on data derived by the European Working Conditions Survey (EWCS) over the period 2000-2015.

The structure of this study has as follows. In section 2 we present the theoretical framework in which our empirical work is based on. In section 3 we present the data and we describe the methodology employed in the empirical work. In section 4 we report the main findings of our study, while in section 5 we discuss the main concluding remarks, policy recommendations and implications.

2. Theoretical Framework

According to Shockley and Allen (2012) organisations have two main motivations when they offer flexible employment schemes. The first refers to the life-management motives and the second to work-related motives. Both are part of the work-life balance and allow employees to handle and manage their individual, family and working lives. This involves instances in which staff must meet family requirements and special needs as the individuals with disabilities studied here. The empirical analysis focuses on a theoretical framework in which flexible employment systems fulfill disability requirements, provide them with autonomy and job control, thereby increasing job satisfaction and increasing the quality of employment. In addition, caregivers are able to balance their work and family life by being employed in these types of working schedules.

The first major element of the theoretical account is, therefore, that flexible working schedules are designed to provide employees with greater control of their jobs, meet their requirements and improve their well-being, thus improving efficiency (Gronlund, 2007; Kelly and Moen, 2007). The reason is because disabled individuals have particular requirements these could be accommodated accordingly, using the flexible employment schemes we explore here (Wooten, 2008; Boehm et al., 2013). The second component, which is strongly linked to the first, relates to the boundary theory, the balance between job and family, in which the focus is on improving the quality of well-being at job, home and in the personal life. Boundary theory assumes that people build fences between those realms of existence, both physically and emotionally (Ashforth, 2001). Flexible working arrangements could in this situation provide individuals with disabilities tools to balance

work demands and their personal needs, to influence their perception of their capacity to regulate work-life boundaries and to improve both job satisfaction and productivity through two channels. First, to gain control of the time schedule and the workplace, and secondly, to improve the quality of life and allocate time to their particular needs, which has additional positive effects to their work and their family.

Three main types of flexible employment are explored on the basis of data availability: work at home, teleworking and flexi-time. In this study, we distinguish between the first two types of work, even though these are often used interchangeably. In particular, teleworking involves working at home, using the laptop, internet and, in general, using information technologies. The advances in the technology which are expected to become even faster in the near future, have reshaped the relationship between home and work, where the flow tends to be from office to home. Such flexible jobs have become more accepted and popular throughout the globe (Crandall and Gao, 2005; Gajendran and Harrison, 2007). Prior studies have highlighted the reasons for the development in home-based and teleworking and demonstrate that employee loyalty and firm-financial performance in different areas of jobs are beneficial to multiple individuals and workplaces, for example organisational loyalty and absenteeism decrease, higher levels of job satisfaction and productivity (Potter, 2003; Golden and Veiga, 2005; Fonner and Roloff, 2010), but have not explored the role of those employment schemes to workers with disabilities.

Flexi-time is the third flexible employment scheme to be investigated, enabling employees to select the start and end time that may vary every day. In some instances, staff may need to work certain times over key periods upon an agreed amount of hours, and to decide whether to be at job outside these certain times. Under this contract, employees will be able to select the starting, ending and lunch times, and to bear any deficit or surplus in the amount of working hours during the next period. This working schedule seeks to moderate the adverse effects of a set work timetable, which constrains people's needs and non-labour requirements (Galinsky and Johnson, 1998). This is also directly linked to individuals with disabilities as they need this flexibility to respond to their particular requirements, health needs, nursing needs and medication.

Earlier studies emphasise the importance of working flexibility for the successful inclusion of people with disabilities (Wooten, 2008; Kulkarni and Lengnick-Hall, 2011). If the evidence shows that the gap in job satisfaction is reduced, then it is quite encouraging, as people with impairments

working in flexible employment schemes report higher levels of job satisfaction. Thus, the first hypothesis of the empirical work is:

Hypothesis 1: Flexible employment schemes increase the job satisfaction of employees with disabilities compared to their counterparts who are not employed under flexible working schedules.

The second objective is to examine the impact of flexible employment schemes on job quality, which is a set of outcomes that are developed at the level of the job and their goal is to capture the workers' job performance and also their working conditions. In particular, the job quality consists of the monthly earnings; the skills and discretion index; the social environment; the physical environment; the intensity; the prospects and the working time quality. While some of those indices are quite clear, such as the monthly earnings, a brief description is given for the rest of them.

The skills and discretion index refers to the skills obsolescence, adaptability and autonomy. These characteristics are important, because the workers that do adapt to the job requirements and the possible changing demands for skills, are at less risk of being unemployed. Moreover, skills obsolescence may improve their future prospects of becoming more productive. A good social environment, implies social support and absence of abuse in the workplace, while the physical environment, refers to health and safety at the workplace. Prospects indicator refers mainly to two components; job security and career advancement. The next indicator is the working time quality which is an index measuring the balance between personal and working time and it refers to night work, long working hours and unsocial hours. A higher value of each component implies a higher quality, except for the intensity, whereas higher intensity at work is negatively associated with job quality. This dimension refers to the demands of a certain job and its performance related to the quality of working time, including long working hours, but also this indicator is related with limited social support and tight deadlines. The second hypothesis is:

Hypothesis 2: Flexible employment schemes improve the job quality of employees with disabilities compared to their counterparts who are not employed under flexible working schedules.

The third objective is to explore the impact of flexible employment on the absenteeism of workers with disabilities, compared to the same group of workers who are employed under traditional and fixed working schedules. According to the expectancy theory (Vroom, 1964), people will have more motivations to perform better for valued goals they think they can reach and

achieve. Therefore, disabled people employed in flexible working schedules will have more resources, in terms of time, place and comfort, more support, higher perceived benefits of the job and thus, will be more likely to perform better, by reducing the incidence of absenteeism at work (Kossek et al., 2006; Kelly and Moen, 2007). Earlier research shows that employees may engage in higher extra-role performance when flexibility is available. Reduction of absenteeism can be used also as a proxy for productivity and loyalty. Lambert (2000) and Greenhaus and Powell (2006) argue that flexible employment schemes may improve the workers' loyalty having a further positive effect on both job satisfaction and their personal life. Following these arguments, the third hypothesis is:

Hypothesis 3*:* Flexible employment schemes reduce the incidence of absenteeism of employees with disabilities compared to their counterparts who are not employed under flexible working schedules.

The second aim of the study is to explore the carers of people with disabilities. Thus, we aim to explore whether the flexible employment schemes improve the job satisfaction and reduces the hours or days of absence at work, according to the theoretical considerations discussed earlier. However, we should notice that we do not account for the job quality in this case for the following reason, because carers mainly would like to choose an employment type that allows them to arrange their family obligations, which is the caring of disabled family members in our case, and will be able to cope with those demands. While we can argue for the opposite, we do not further explore the job quality, as we are mainly interested on whether carers who are employed in flexible employment schemes are more satisfied with their job and reduce the hours or days of absence at work. The findings will provide valuable insights from two aspects. In the case of improvement in job satisfaction, implies an improvement of carers' well-being and thus an efficiency, up to some degree, of the flexible employment. Second, improvement on both job satisfaction and absenteeism, implies an increase in productivity and reduction of potential loss for the employer, for the reasons we have discussed before.

Hypothesis 4*:* Flexible employment schemes improve the job satisfaction and reduce the absenteeism of carers compared to their counterparts who are not employed under flexible working schedules.

The assumptions of hypotheses 3-4 lies in the fact that flexible employment arrangements can be implemented to reduce work-life conflict and enhance the work-life balance, such as time allocated for caring of disabled family members, organising family commitments, and devoting time that disabled people need, including home care, hospital and nursing services, and reducing, if not eliminating, commuting time to work. Earlier studies show that workers who experience work to life conflicts report lower levels of job satisfaction and loyalty to the organisation resulting to reduction of the performance and increase in absenteeism (Beauregard and Henry, 2009). Therefore, we assume that flexible employment arrangements can reduce the absence rates at work, since these allow workers to manage disability, chronic illnesses and long-term health conditions, support their stress, anxiety and mental health, and caring responsibilities (Giardini and Kabst, 2008; CIPD, 2018).

3. Data and Methodology

3.1 Data Sources

The data used for the empirical work are derived from the European Working Conditions Survey (EWCS) and the period of our analysis is 2000-2015. EWCS is conducted by the European Foundation for the Improvement of Living and Working Conditions (Eurofound) and it covers the EU-28 member states and 7 associated countries. The survey asks a range of questions to workers concerning the employment status, health status and incidence and presence of impairments, work organisation and environment, working time and schedule, earning and financial security and perceptions, including job satisfaction. The EWCS draws information at work across countries, age groups, occupations and sectors, and its aim is to provide information and input for research in order to quantify working conditions and to analyse relationships between different aspects of those conditions. Furthermore, the purpose of using the EWCS is to identify groups at risk for research analysis, which can contribute and provide valuable insights to European policy development on employment issues and quality of work and highlight actions for policy decision makers to act in order to address the challenges that workers across Europe face today. The survey is conducted every five years and is based on a questionnaire administered face-to-face to a random sample of

individuals in employment, representative of the working population in each country. The target population of the survey refers to the residents aged 15 or older, but 16 or older in Bulgaria, Norway, Spain and the UK, and being in the employment. According to the definition by the International Labour Organization (ILO), EWCS considered people to be in employment, if they have worked at least an hour in the week preceding the interview. The target sample size in the majority of the countries was 1,000, but to reflect the larger workforce in larger countries the target was increased to 1,200 in Poland, 1,300 in Spain, 1,400 in Italy, 1,500 in France, 1,600 in the UK and 2,000 in Germany and Turkey (Eurofound, https://www.eurofound.europa.eu/surveys/european-quality-of-life-surveys).

3.2 Methodology

Based on the type of the outcomes explored, we will employ two regression methods. The first outcome is the job satisfaction and since it's an ordered variable and not continuous we will estimate the following Ordered Probit model (Greene, 2012):

$$JS^*_{ijt} = \alpha + \beta_1 FE_{ijt} + \beta' \mathbf{X}_{ijt} + \mu_j + \theta_t + e_{ijt} \tag{1}$$

Where JS^* is the unobservable dependent variable, which evaluates the state of job satisfaction of the individual i in country j and year t. This is an ordered variable taking values 1 for *not at all satisfied*; 2 for *not very satisfied*; 3 for *satisfied* and 4 for *very satisfied*. Variable *FE* denotes the flexible employment scheme explored, and vector $\mathbf{X}$ includes various individual and firm characteristics. Following the earlier literature, it is common to control for various characteristics (Clark and Oswald, 1994; Frijters et al., 2004). This includes the respondent's gender, age, education level, the workplace size, which is proxied by the number of employees, the professional class, which is defined by the International Standard Classification of Occupations, ISCO-88 and the industry which is denoted by the Statistical classification of economic activities in the European Community and finally whether the workplace belongs to the public or private sector, and the country. The purpose of including these additional individual and workplace characteristics is first, to control for possible confounding bias, as these may affect both the outcomes explored and the main independent variable of our interest, which is the type of the flexible employment explored. This will allow us to net out the effect of those schemes on the outcomes explored. Second, we aim

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to see also how job satisfaction, job quality and absenteeism, vary by gender, age education level and the other factors included into the regressions. Set μ_j denotes the country fixed effects and θ_t is the time-year fixed effects. While the EWCS is a repeated cross-sectional survey regarding the dimension of the individuals, we are unable to consider the individual fixed effects. The error term is denoted by e_{ijt} and we assume it follows a normal distribution. We should notice that employing an Ordered Logit Model the concluding remarks remain the same and thus, we limit our analysis on the Ordered Probit.

Similarly, we will estimate an Ordered Probit model for absenteeism as it is a categorical variable measured on an ordered scale. In particular, it answers to the question: "In the past 12 months how many days have you been absent due to sick or health related leave?" and is taking the following values: 1 for *never*, 2 for *1-4 days*, 3 for *5-9 days*, 4 for *10-19 days*, 5 for *20-49 days* and 6 for *more than 49 days*. Thus, a negative sign of the estimated coefficient will imply a lower probability of being absent due to health related issues. For the job quality we will apply the ordinary least squares (OLS) method, since the job quality indicators examined are continuous variables (Greene, 2012). Equation (1) remains exactly the same and vector **X** includes the same variables mentioned before and are presented in the empirical results section.

4. Empirical Results

As we have discussed in the theoretical framework our main aim is not to compare the job satisfaction between disabled and non-disabled workers, but to compare the job satisfaction in the former group between those who implement flexible employment skills and those who are not. In table 1 we report 8 columns, corresponding to one regression for each type of disability. Thus, in column 1 we have those with *vision impairment*, column 2 those with *backache*, in column 3 those with *muscular pain in upper limbs, neck and shoulders*, in column 4 people with *muscular pains in the limbs*, in column 5 those with *headache and eyestrain*, in column 6 people with *injuries*, such as accidents, in column 7 those with *anxiety*, and in column 8 people with *chronic fatigue syndrome* (CFS).

The results clearly show the positive impact of flexible employment schemes on job satisfaction for various types of disability significant at 5 and 1 percent level. The only exception is the first type of disability, which refers to workers with vision impairments, where the estimated coefficient

is insignificant, indicating that there is no difference in job satisfaction between teleworkers and non-teleworkers in this group of disability. This is an important finding, showing that flexible employment schemes can be promising by improving job satisfaction and thus, the workers' productivity and loyalty, and further enhancing the firm performance. The highest effect is observed to workers with headache and eyestrains, followed by those with muscular pains in the lower limbs, and with pain in upper limbs, neck and shoulders. Those with backache, injuries and anxiety present slightly lower impact of teleworking on job satisfaction, while teleworking presents the lowest effects in the sample suffering from the chronic fatigue syndrome.

As we mentioned earlier, it is important to control for additional individual and firm characteristics, since they can be confounders, influencing both flexible employment schemes and the outcomes explored. For instance, more educated people can use information and communication technology tools more effectively than those with low educational attainment. In line with this, more educated people are more likely to be employed in high skilled teleworking jobs, such as research, writing, data analysis and graphic design. Similar arguments hold for the rest of the control variables. For example, the industry within the respondents are employed is important, as services are more likely to offer this type of employment than firms operating in the mining, farming and manufacturing sector. Furthermore, this heterogeneity is extended within the same industries. More specifically, the professional class may determine whether the respondent will be employed in a flexible employment scheme affecting her job satisfaction. Thus, a white-collar worker, such as a manager, analyst or scientist employed in the manufacturing, is more likely to telework than a blue-collar worker who has to perform a physical labour in the workplace.

We see that there are no gender differences, except for those with visual impairments and injuries, where females are less satisfied with their jobs, while older people report higher levels of job satisfaction in the case of the sample with headache and eyestrain in column 5 and with anxiety in column 7. Higher educational attainment is associated with higher levels of job satisfaction, which can be explained it offers more labour opportunities and higher earning potentials and also better matching to workers' skills. We observe, that working experience has the expected positive sign, implies a higher perception of job satisfaction, while the quadratic term becomes negative, indicating a turning point and showing an evidence of the diminishing rates of returns to satisfaction.

An interesting result is that the workplace size is inversely related to job satisfaction, implying that small-medium enterprises can offer a friendlier and more comfortable environment and the needs of workers with disabilities may fit better to these workplaces. Also, we observe that people employed in the public sector are more satisfied with their jobs. Workers in the manufacturing, services and public administration in the majority of the disability types we explore, are more satisfied with their job compared to the reference category, which is the primary sector, and more precisely, the agriculture, fishery, forestry and mining.

The professional class which is defined by the International Standard Classification of Occupations, ISCO-88 presents no significant differences in the job satisfaction among the people with various types of disability. An exception is the managerial positions, where workers report higher levels of job satisfaction compared to the reference category which is the armed forces. On the other hand, in some limited cases, and in particular, in the sample of those with anxiety problems, the following professional classes are less satisfied with their job compared to armed forces: clerical support workers, crafted and related trades workers and skilled workers in the agricultural, fisher and forestry sectors.

(Insert Table 1)

In table 2 we report the estimates for teleworking and job satisfaction between both workers with disabilities and those without. As we have discussed so far, the aim of the study is to compare the job satisfaction within the former group and to evaluate the impact of the flexible employment schemes. However, the objective of presenting the results in table 2 is to investigate whether the gaps in the job satisfaction are reduced between the two groups-health and disabled workers-through the flexible employment schemes offered in the workplace. The results regarding the teleworking is positive and significant for those with vision impairment, headaches, injuries, anxiety and overall fatigue, while the estimated coefficient for the rest of disability types is insignificant. The estimated coefficients of the dummies indicating whether the respondent suffers from a specific type of disability is negative and significant at 1% significant level in all cases. This is expected as health is one of the major determinants of job satisfaction and disability has adverse effect on well-being. However, the interaction term of the disability type and telework tells a different story. In particular, in columns (3)-(5) we find a significant and positive impact of telework on job satisfaction of workers with disabilities, compared to those who do not implement

this type of working schedules. This indicates the positive impact teleworking may have to people with muscular pains in shoulders and neck (0.145, se=0.076), significant at 10%, with muscular pain in the limbs (0.165, se=0.077) significant at 5% and those with headache (0.133, se=0.075) significant at 10% level and *se* stands for the standard error of the coefficient. On the other hand, we find a negative and significant coefficient at the 10% level, when we consider people with vision impairments, estimated at -0.173 (se=113). Finally, we find an insignificant effect for those with backache, injuries, anxiety and overall fatigue. For the rest of the flexible working schedules explored-homework and flexi-time, we present and discuss only the results for the sample of workers with disabilities. We do not present the overall sample, since it's not the main aim of our study. However, the purpose of reporting the findings of table 2 was to highlight the high importance of flexible employment for this group of workers and how they may improve their well-being compared to those who do not implement flexible employment schemes. Overall, the results indicate that even there are still persistent inequalities between disabled and non-disabled workers due to many factors, such as productivity, skills and others, these inequalities are likely to be reduced when workers with disabilities follow flexible employment schedules. Based on the Wald Chi-square statistic and its associated p-value we conclude that all ordered Probit regressions are significant.

(Insert Table 2)

In table 3 we report the estimates for homework and flexi-time for the workers with disabilities, as we have presented for telework in table 1. The findings in table 3 confirm the first hypothesis discussed in the theoretical framework and the positive impact of flexible employment on job satisfaction of workers with disabilities. In particular, in panel A, we observe that disabled people working at home, report higher levels of job satisfaction compared to their counterparts-disabled workers- who do not implement this employment scheme. Exception is workers with injuries, where we find no significant difference in the job satisfaction. The highest impact of homework is noted to the workers with visual impairments and with muscular pains in the upper limbs, shoulders and neck. Similar results are reported in the panel B of the table 3, where flexi-time has a significant and positive impact in all disability groups explored with the highest impact noted in the anxiety group, followed by those with fatigue syndrome, headache, backache, muscular pains in neck, and

shoulders, while the lowest effect is observed to the group of people with visual impairments and those with muscular pains in the lower limbs.

The findings clearly show that flexible employment schemes in the majority of the disability cases we explore, have a positive impact on the job satisfaction. Furthermore, we argue that while inequalities are still persistent between disabled and non-disabled people, flexible employment schedules may contribute to the reduction of those gaps and to further improve their well-being more than their disabled counterparts who are not employed in these flexible schemes. The policy implications also refer that the discrepancies between disabled and non-disabled workers cannot be eliminated only by the implementation of flexible employment schemes, but the latter in combination with other "active" and "passive" labour policies, which are discussed in the next section, may reduce even more the gap. The p-value of the Wald Chi-Square statistic is lower than 0.01 in all cases, concluding that the regressions are statistically significant at 1% level.

(Insert Tables 3)

Next in tables 4-5 we report the estimates for the hypotheses 2 and 3. The sample includes all disabled workers, and the regressions are not estimated for each disability type separately. The reason is that job quality indicators, such as the earnings, social environment and prospects are available only in the year 2015, while for the rest of the job quality indicators we consider also the years 2000, 2005 and 2010. This limits the sample of analysis and we are unable to estimate the regressions using an adequate sample. Furthermore, due to the low number of observations we cannot estimate the regressions for earnings, social environment and prospects, when we consider teleworking.

In table 4 we see the positive impact of the flexible employment schemes explored in various indicators of job quality, except for telework, which has a negative impact on quality of time and intensity of work. In particular, regarding the monthly earnings, those who are employed in the flexi-time scheme report higher earnings compared to their counterparts who are employed in traditional fixed schemes. Also, workers employed in this scheme report higher quality of job in terms of the physical and social environment, while homeworkers report significant and positive impact only in the case of the physical environment. Homework and flexi-time reduce the intensity of the work, while on the contrary telework is associated with additional intensity. The same concluding remarks are derived with the quality of working time. Finally, according to the skills

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and discretion index, the findings support that all three flexible employment schemes explored allow the workers with disabilities to have more chances of adapting and matching their skills to the requirements of the job, while only flexi-time is positively related to the prospects. Overall, flexible employment schemes are positively related with the job quality, except for some cases where there is no significant difference between flexible and non-flexible workers. On the other hand, telework is associated with more intensity and lower quality of working time, probably indicating the long working hours and tight deadlines.

In table 5 we report the estimates for the absenteeism. We should remind the reader that the dependent variable is an ordered variable taking the values 1 for *never*, 2 for *1-4 days*, 3 for *5-9 days*, 4 for *10-19 days*, 5 for *20-49 days* and 6 for *more than 49 days*. According to the estimates of panel A in table 5, we conclude that teleworkers are less likely to be absent from work compared to the non-teleworkers for the following disability types: muscular pain in the neck, shoulders and upper limbs; muscular pain in the lower limbs; injuries and anxiety, while we find no difference in the absenteeism between teleworkers and non-teleworkers for the rest types of disability. Similarly, in panel B, we observe that homework reduces the probability of being absent from work because of health issues, except for those who have experienced injuries. Flexi-time seems to reduce the incidence of absenteeism only to three groups of disability: those with backache, those with injuries and workers with anxiety issues. The rest of the cases show no difference in the absenteeism from work between flexi-time workers and those employed in fixed working schedules. The R-square values in table 4 range within the expected values, since the regression analysis is based on cross-sectional data, as is our case, while high values are common in time-series data. In table 5, the values of the Wald test and its associated p-values show that the regressions are overall statistically significant at 1% level.

(Insert Tables 4-5)

In table 6 we report the regression estimates for the job satisfaction and absenteeism for carers and in particular for workers who are not disabled, but they have family obligations and in particular, they are responsible of caring disabled family members. Here, the objective is to test hypothesis 4, discussed in the theoretical framework section. More specifically, the assumption lies in the argument that flexible employment schemes may allow people to cope with family demands

and needs of the disabled family members, by providing them additional time and flexibility. For instance, teleworking and homework may reduce or even eliminate the commuting time from home to employer's premises, which can be allocated to the care of people with disabilities, improving their job satisfaction and reducing the possibility of being absent from work. The results in table 6 confirm partially hypothesis 4, where teleworkers and people who work within the flexi-time scheme report higher levels of job satisfaction. Furthermore, in panel B we conclude that both teleworking and homework reduce the days of absence at work due to health related issues.

(Insert Table 6)

5. Discussion and Conclusions

Our findings suggest a positive impact of the flexible employment arrangements in the outcomes explored. In particular, we find a positive effect on the job satisfaction of workers with disabilities compared to their counterparts who are employed under fixed working schedules. Additionally, we found that the job satisfaction differences between healthy workers and workers with disabilities are reduced when the flexible employment schemes are in place. Furthermore, workers who are employed under homework and flexi-time, report higher levels of social and physical working environment; better quality of working time; lower intensity at work, compared to the workers with disabilities who are employed under traditional employment schemes.

There are two main policies for social support, including also people with disabilities. The first category includes the "passive" policies, where disabled people rely on social benefits, such as disability, sickness and injury allowances. However, our argument is that these social benefits cannot be effective in the long-term for two main reasons. First, the continuous reliance on government support increases the burden of the government budget, which could have been allocated to other socio-economic activities, unless people are completely unable to work, which actually consists of a small proportion in the total population. Second and most important, people with disabilities will rely on social benefits, keeping them out of employment, losing their skills, prohibiting them from gaining valuable working experience, which will impact their socioeconomic well-being and psychological and mental health in the long run period. In the case of flexible employment, workers with disabilities will become less dependent on social benefits

and care of other people, improving their job satisfaction, and thus, their organisation loyalty and performance and their overall well-being.

Therefore, organisations and firms need to comprehend the diversity of their workforce and to realize that, as the sample of disabled workers examined here, that employees coming from different backgrounds with different needs, may desire to make flexibility agreements for multiple purposes. One way to accomplish this is by means of employee surveys in the event of flexible systems being absent. This will allow them to identify the demographics and key drivers of staff and employees and then design, schedule and execute flexible agreements that are tailored to each group and individual's special needs. If flexible employment is not available, companies should conduct experiments as pilot systems in order to guarantee similar features, choosing a randomly treated sample used in flexible schemes, as well as a control group employed in fixed-conventional employment schemes. Then, they can test different outcomes and results, like and job satisfaction, productivity and efficiency, stress, allegiance, employee loyalty and absenteeism.

Overall, the suggestions, recommendations and policy implications that have been discussed so far, suggest that effective implementations of flexible employment systems at state and corporate level should be addressed and designed. In terms of financial and economic incentives and subsidies, the government, including local authorities and educational institutions should support companies if those are faced with financial limitations. In addition, these organisations should provide advice and relevant information to companies regarding the potential advantages of flexible employment and are particularly skeptical of these systems in the case of executives and employers. At company level, employers and staff should reach agreement on the type of flexible work, identifying the workers' unique requirements and providing them with a long-term assistance, but also enabling them to report on the findings and take action to enhance their loyalty, performance and productivity on an ongoing basis.

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Table 1. Telework and Job Satisfaction for Workers with Disabilities

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Telework	0.037	0.203***	0.215***	0.225***	0.239***	0.192**	0.190***	0.118**
	(0.104)	(0.053)	(0.056)	(0.056)	(0.056)	(0.097)	(0.071)	(0.053)
Sex (Female)	-0.176***	-0.011	-0.025	-0.023	-0.009	-0.132***	0.001	-0.030
	(0.055)	(0.026)	(0.026)	(0.027)	(0.031)	(0.049)	(0.042)	(0.027)
Age	0.003	0.002	0.001	0.001	0.003*	0.002	0.004*	0.002
	(0.003)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
Primary	-0.548**	-0.081	-0.070	-0.048	-0.284	-0.178	-0.405*	-0.061
	(0.267)	(0.149)	(0.143)	(0.143)	(0.175)	(0.198)	(0.212)	(0.153)
Lower secondary	0.169	0.285**	0.230**	0.243**	0.270*	0.544***	0.455**	0.209*
	(0.254)	(0.117)	(0.117)	(0.117)	(0.140)	(0.203)	(0.211)	(0.119)
Upper secondary	0.359	0.368***	0.306***	0.323***	0.350**	0.550***	0.565***	0.277**
	(0.252)	(0.117)	(0.117)	(0.117)	(0.139)	(0.207)	(0.209)	(0.120)
Post-secondary	0.389	0.440***	0.376***	0.392***	0.397***	0.631***	0.650***	0.325***
	(0.247)	(0.116)	(0.116)	(0.117)	(0.138)	(0.206)	(0.207)	(0.119)
First Degree	0.402	0.416***	0.345***	0.360***	0.439***	0.697***	0.687***	0.324***
	(0.261)	(0.122)	(0.122)	(0.122)	(0.145)	(0.217)	(0.214)	(0.125)
Post Graduate	0.276	0.408***	0.370***	0.374***	0.415***	0.662***	0.727***	0.343***
	(0.259)	(0.121)	(0.121)	(0.122)	(0.143)	(0.217)	(0.213)	(0.124)
Experience	0.007	0.010***	0.008**	0.007**	0.005	0.012**	0.013*	0.008*
	(0.007)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)	(0.004)
Experience Square	-0.0001*	-0.0001**	-0.0001**	-0.0001*	-0.000	-0.0001*	-0.0001**	-0.0001**
	(0.00005)	(0.00005)	(0.00005)	(0.00006)	(0.000)	(0.00006)	(0.00005)	(0.00005)
Firm Size (2-9)	-0.108	-0.111***	-0.118***	-0.128***	-0.104**	-0.092	-0.120*	-0.059
	(0.092)	(0.039)	(0.039)	(0.040)	(0.047)	(0.069)	(0.069)	(0.041)
Firm Size (10-249)	-0.195**	-0.273***	-0.267***	-0.279***	-0.216***	-0.209***	-0.205***	-0.203***
	(0.091)	(0.040)	(0.041)	(0.042)	(0.049)	(0.071)	(0.071)	(0.042)
Firm Size (250 +)	-0.302***	-0.350***	-0.369***	-0.374***	-0.299***	-0.289***	-0.223**	-0.325***
	-0.108	-0.111***	-0.118***	-0.128***	-0.104**	-0.092	-0.120*	-0.059
Public Sector	-0.046	0.113***	0.171***	0.179***	0.100**	0.063	0.132**	0.149***
	(0.078)	(0.040)	(0.040)	(0.040)	(0.048)	(0.070)	(0.065)	(0.043)
Managers	-0.065	0.296*	0.319*	0.319*	0.129	0.095	-0.117	0.116
	(0.298)	(0.172)	(0.180)	(0.181)	(0.208)	(0.248)	(0.239)	(0.180)
Professionals	0.074	0.248	0.270	0.281	0.178	0.025	-0.173	0.168
	(0.283)	(0.167)	(0.175)	(0.176)	(0.202)	(0.240)	(0.229)	(0.175)
Technicians	-0.068	0.195	0.214	0.230	0.073	0.104	-0.258	0.067
	(0.282)	(0.165)	(0.174)	(0.174)	(0.202)	(0.227)	(0.229)	(0.174)
Clerical Support	-0.101	0.115	0.183	0.198	-0.007	-0.148	-0.391*	-0.033
	(0.289)	(0.168)	(0.177)	(0.177)	(0.204)	(0.253)	(0.232)	(0.177)
Service and Sales	-0.168	0.142	0.147	0.190	-0.071	-0.007	-0.280	-0.051
	(0.285)	(0.167)	(0.175)	(0.175)	(0.203)	(0.228)	(0.231)	(0.175)
Skilled Primary Sector	-0.342	0.027	-0.021	-0.021	-0.249	-0.088	-0.744***	-0.330*
	(0.315)	(0.178)	(0.186)	(0.186)	(0.220)	(0.250)	(0.253)	(0.189)
Craft workers	-0.292	-0.013	0.020	0.026	-0.164	-0.027	-0.614***	-0.226
	(0.275)	(0.166)	(0.175)	(0.175)	(0.204)	(0.227)	(0.233)	(0.175)
Machine operators	-0.327	-0.005	-0.019	-0.007	-0.309	-0.213	-0.550**	-0.210
	(0.277)	(0.167)	(0.176)	(0.176)	(0.205)	(0.232)	(0.238)	(0.176)
Manufacturing	0.170	0.329***	0.236***	0.234***	0.300***	0.141	0.086	0.210***
	(0.137)	(0.066)	(0.068)	(0.068)	(0.085)	(0.104)	(0.110)	(0.072)
Services	0.166	0.300***	0.208***	0.194***	0.324***	0.297***	0.069	0.181**
	(0.142)	(0.065)	(0.067)	(0.067)	(0.084)	(0.108)	(0.108)	(0.072)
Public Administration	0.284*	0.381***	0.283***	0.297***	0.363***	0.279**	0.120	0.251***
	(0.150)	(0.068)	(0.070)	(0.070)	(0.087)	(0.114)	(0.114)	(0.075)
Observations	2,369	9,091	8,861	8,611	6,272	3,026	3,329	8,397
	437.71	1,359.94	1,372.91	1,225.95	991.71	445.61	465.70	989.26
Wald Chi-Square	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Robust standard errors in parentheses, P-values in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 2. Telework and Job Satisfaction for Disabled and Non-Disabled Workers

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)
Vision	-0.191*** (0.027)							
Telework	0.192*** (0.044)	0.097 (0.061)	0.080 (0.057)	0.069 (0.057)	0.123** (0.056)	0.145*** (0.044)	0.178*** (0.048)	0.230*** (0.058)
Vision*Telework	-0.173* (0.113)							
Backache		-0.265*** (0.022)						
Backache*Telework		0.114 (0.078)						
Muscular Pain			-0.235*** (0.021)					
Muscular Pain*Telework			0.145* (0.076)					
Muscular Pain Limbs				-0.257*** (0.021)				
Muscular Pain Limbs*Telework				0.165** (0.077)				
Headache-Eyestrain					-0.264*** (0.020)			
Headache-Eyestrain*Telework					0.133* (0.075)			
Injury						-0.236*** (0.025)		
Injury*Telework						0.053 (0.105)		
Anxiety							-0.413*** (0.025)	
Anxiety*Telework							0.063 (0.084)	
Overall Fatigue								-0.319*** (0.022)
Overall Fatigue*Telework								-0.091 (0.076)
Observations	13,945	14,026	14,034	14,027	13,986	13,956	13,949	14,011
Wald Chi-Square	2,230.64 [0.000]	2,306.28 [0.000]	2,312.04 [0.000]	2,369.51 [0.000]	2,369.74 [0.000]	2,263.75 [0.000]	2,449.56 [0.000]	2,449.38 [0.000]

Robust standard errors in parentheses, P-values in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 3. Homework, Flexi-Time and Job Satisfaction for Workers with Disabilities

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Homework								
Homework	0.145**	0.082***	0.106***	0.060**	0.098***	0.015	0.094**	0.071***
	(0.058)	(0.027)	(0.028)	(0.029)	(0.030)	(0.058)	(0.042)	(0.027)
Observations	6,015	34,769	34,323	27,695	28,772	7,783	11,116	32,349
Wald Chi-Square	991.49	4,284.80	4,458.77	3,334.66	3,353.71	1,049.12	1,107.94	3,163.81
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Panel B: Flexi-Time								
Flexi-Time	0.102**	0.140***	0.148***	0.098***	0.131***	0.136***	0.194***	0.148***
	(0.046)	(0.019)	(0.019)	(0.022)	(0.020)	(0.041)	(0.032)	(0.020)
Observations	4,528	25,165	24,950	19,910	21,262	5,636	8,071	23,531
Wald Chi-Square	699.44	2,676.52	2,898.71	2,109.72	2,208.20	690.11	775.74	2,036.73
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Robust standard errors in parentheses, P-values in brackets, *** $p<0.01$, ** $p<0.05$

Table 4. Flexible Employment Schemes and Job Quality for Workers with Disabilities

VARIABLES	Earnings	Social Environment	Physical Environment	Intensity	Prospects	Skills-Discretion	Quality of Time
Panel A: Telework							
Telework			-0.4469	1.4446***		5.5234***	-4.080***
			(0.2830)	(0.3005)		(0.4479)	(0.5369)
Observations			27,709	27,583		27,711	27,713
R-Square			0.2963	0.1459		0.2524	0.2096
Panel B: Homework							
Homework	-42.813	0.1228	0.3509*	-2.7577***	0.1947	5.4214***	4.7652***
	(77.641)	(1.7498)	(0.1893)	(0.4455)	(1.0548)	(0.3924)	(0.4818)
Observations	1,354	3,818	29,405	29,271	4,635	29,406	29,409
R-Square	0.4802	0.3868	0.2985	0.1467	0.1361	0.2539	0.2096
Panel C: Flexi-Time							
Flexi-Time	130.449**	4.689***	1.8200***	-1.8787***	1.5877*	9.1096***	1.6318***
	(63.552)	(1.3090)	(0.2175)	(0.4152)	(0.8627)	(0.3837)	(0.3649)
Observations	929	2,777	21,989	21,902	2,870	21,990	21,991
R-Square	0.5682	0.3748	0.3028	0.1367	0.1368	0.2826	0.1592

Robust standard errors in parentheses, P-values in brackets, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5. Flexible Employment Schemes and Absenteeism Workers with Disabilities

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Telework								
Telework	-0.097	-0.055	-0.113*	-0.112*	-0.060	-0.221**	-0.228***	-0.070
	(0.109)	(0.058)	(0.059)	(0.060)	(0.063)	(0.108)	(0.077)	(0.058)
Observations	2,328	8,917	8,668	8,431	6,138	2,974	3,263	8,212
	437.71	1,359.94	1,372.91	1,225.95	991.71	445.61	465.70	989.26
Wald Chi-Square	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Panel B: Homework								
Homework	-0.121*	-0.053*	-0.090***	-0.086**	-0.106***	0.009	-0.115**	-0.056*
	(0.067)	(0.032)	(0.032)	(0.044)	(0.036)	(0.067)	(0.050)	(0.033)
Observations	5,837	33,259	32,842	26,430	27,486	7,481	10,614	30,873
	364.62	2,594.78	2,504.32	2,134.48	2,138.30	942.62	1,082.47	2,669.39
Wald Chi-Square	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Panel C: Flexi-Time								
Flexi-Time	-0.066	-0.054***	-0.031	-0.036	-0.031	-0.096**	-0.114***	0.004
	(0.044)	(0.019)	(0.019)	(0.022)	(0.020)	(0.040)	(0.033)	(0.023)
Observations	4,432	24,339	24,125	19,240	20,533	5,474	7,787	21,706
	295.04	1,793.09	1,720.05	1,500.51	1,547.71	660.19	744.80	2,250.41
Wald Chi-Square	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Robust standard errors in parentheses, P-values in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 6. Flexible Employment Schemes, Job Satisfaction and Absenteeism for Carers

VARIABLES	(1)	(2)	(3)
Panel A: Job Satisfaction			
Telework	0.137***		
	(0.050)		
Homework		0.040	
		(0.031)	
Flexi-Time			0.137***
			(0.023)
Observations	6,768	21,749	15,629
	903.63	2,326.35	1,310.42
Wald Chi-Square	[0.000]	[0.000]	[0.000]
Panel B: Absenteeism			
Telework	-0.106*		
	(0.057)		
Homework		-0.070*	
		(0.037)	
Flexi-Time			-0.039
			(0.024)
Observations	6,619	20,691	15,062
	428.33	1,578.70	1,179.11
Wald Chi-Square	[0.000]	[0.000]	[0.000]

Robust standard errors in parentheses, P-values in brackets, *** p<0.01, * p<0.1