

The potential impact (including the socio-economic impact and the wider societal implications of the project so far) and the main dissemination activities and exploitation of results

Potential Impact and Policy Implications

(a) On Absenteeism

Barmby (2012) research has the potential to allow a more accurate interpretation of empirical absence studies, and gives a new way of thinking about the effect of policy in this area. In *Ercolani (2012)*, the long-run socio-economics patterns of sickness absence brought to light by the research are either ones which verify existing ideas or are ones that seem self-evident when they are first shown. It is actually unusual to have statistical research where the results are so consistent with expectations and the reason may be the use of a large, four-million individuals, sample size. These results are useful because they provide information that can be interpreted by interested non-specialists. The results show that, unsurprisingly, rates of sickness absence seem to fall as hourly earnings increase. There are regional variations in the rate of sickness absence, though there is no single obvious explanation for this. Rates of sickness absence also vary by industry and occupation, and these seem to be connected to the status of the occupation and the nature of the work undertaken. Two particularly strong results suggest that rates of sickness absence increase with time in tenure with an employer and with the number of employees at the workplace. Employees in the first few months of tenure have very low absence rates and employees who have smaller numbers of co-workers at the workplace also tend to have lower absence rates.

The findings of *Ercolani (2012b)* inform policy makers as to the formulation of regional policies that aim to improve the health of the workforce and diminish regional differences in workplace absenteeism. We find that half of all the explainable regional difference is due to the higher hourly wages offered in the South of the UK. Therefore much of the regional difference in absenteeism is probably due to two factors. Firstly is the incentives that workers face in attending an extra hours of work either because of the direct wage remuneration or because better attendance translates into higher wage rates in the future. Second are the direct health effects that a higher income can provide in terms of a healthier life. We can say little of the latter but with respect to the former we can say that this is a straightforward matter of incentives. The prediction turns out to be an obvious one but backed by statistical evidence; relative wage increases in the North would drive a drop in absenteeism to the same proportion as they would in the South. The other characteristics that are associated with higher sickness absence are being female, holding a second job and working in the public sector. These latter results are driven by females still being typically responsible for what is generically called “home production”, holding a second job evidently imposes an opportunity cost on the main job and being in the public sector may infer a degree of job security that permits greater sickness absence. Half of the solution to the regional differences in absenteeism is therefore simply a matter of economic development and creating opportunities for regional labour markets. However, simply reducing absenteeism should not be the only target because increasing output is only an intermediate target to achieving our real target of increasing welfare (or utility in the economists’ jargon). We already know that achieving a work-life balance is an important objective but simply increasing incentives for nobody to ever be absent should not be the target nor is it achievable. We would not wish workers to continue to attend work when genuinely ill because they may pass on transmittable their illness to others and also because this may harm their long-term health status.

Beblo (2012) shows the statistical relationship between absenteeism and family obligations has practical implications for personnel policy as well as social policy: if – in the lack of public care infrastructure – women are considered responsible for household and care work, employers will expect women (with children) to be absent more often than men. Statistical discrimination against women or individuals with household and care responsibilities might be the frequently discussed consequence. The existence of different societal norms regarding the absences of female and male employees is demonstrated in Patton Eric and Johns Gary’s (2007) analysis: higher absences of women are not only expected but also legitimized. However, our findings indicate that this stereotype does not represent actual behaviour of German employees any longer. Nonetheless, in order to avoid a self-fulfilling prophecy of an employer’s expectations of a care-related higher absence rate of a female employee, resulting in less pleasant job characteristics and working conditions, social policy should provide an infrastructure of care facilities that would ease the link between absenteeism and family obligations.

Schreiber (2011) give a first illustration of our approach (of using Google symptom search data as a proxy for actual sickness) and present preliminary findings with German data. The predominant problem of our analysis is the very short sample size: the German diagnosis-specific sickleave data was only available until 2009, apart from the fact that it is only published at an annual frequency. The weekly internet search data is downloadable from Google for the

years starting in 2004. This time span does not really represent a “longer run” in the usual sense. Thus our empirical results should be viewed as an illustration of our suggested methodology, not as robust evidence, and be followed up in the future (or for other countries) when more data become available.

Böckerman, Petri, Johansson and Kauhanen, (2011) state that the finding of minor, if any, effects of workplace innovations on sickness absence and accidents at work stands in sharp contrast with previous results reporting a positive relationship between workplace innovation systems and sickness absence. However, these previous studies have, as noted above, mainly considered cumulative disorders and other specific injuries or illnesses, not the overall impact on employee health. This implies that even in the case of non-negligible effects on single health aspects, the overall impact of the adoption of innovative workplace practices may, nonetheless, be neutral or even health improving. There might, however, also be other important aspects influencing the results obtained. In particular, the tradition of close cooperation between employers and employees characterizing Finnish labour market institutions may well affect the results. This would suggest that improved cooperation between employees and employers could help in reaping the benefits to be gained from wider use of innovative work practices.

Drakopoulos and Grmani, (2011) highlight that in recent years, there has been an increasing interest concerning the economics of absenteeism, spurred by a growing awareness that the economic and social costs of the phenomenon are quite substantial. Thus, it is not surprising that many studies have concentrated on the determinants of absenteeism in an attempt to discover ways and policies to reduce it. In contrast to other European countries, the issue of absenteeism in Greece has not been the subject of systematic investigation. This paper utilized a large sample to test the issue of injury absenteeism – job satisfaction relationship. There is a lack of attention to this specific type of absenteeism and its relationship with job satisfaction. Hence, given the limited empirical research based on Greek data, this study also attempted to fill this particular gap. However, more similar research and inter country comparisons of absenteeism similarities and differences are needed if appropriate policy recommendations can be identified.

Blazquez (2012) states that in order to reduce the incidence of absenteeism due to sickness leave it is vital to understand in more detail the reasons behind this. This is the main purpose of the present paper. Using quarterly data from the Spanish Labor Force Survey for the period 1996-2004, it examines which demographic and workplace characteristics are more likely to increase the rates of sickness absence. The sickness absence rate varies between 2% and 2.5%, and the values have remained stable along the period under consideration. Both the descriptive and the econometric analysis reveal that females are more likely to be absent from work due to sickness than their male counterparts. Furthermore, gender difference are found as regards the effects of marital status on absenteeism, with married females being more likely to be absent from work than their single counterparts, while the opposite is observed among males. Age also plays a role in explaining absenteeism. In particular, the analysis confirms previous findings on increasing prevalence of sickness absence among older workers. Public sector absence rates exceed private sector ones. The disparity in these figures is often seized upon by conservative commentators as proof that the public sector has a “relaxed attitude” towards employees taking time off work when compared to the private sector. This result, then, claims for stronger effort to prevent absenteeism in the public sector. The lower rates of sickness absence observed among temporary workers reveal that absenteeism is also related with job insecurity. Finally, the results point out that socio-economic status play a role in explaining the risk of sickness absence. This conclusion is extracted from the potential impact that occupation and education – closely related to socio-economic status – exert on absenteeism.

(b) On exposure to job strain

Sultan-Taïeb et al. (2011) study provides a comparison of job strain exposure covering a large number of European countries based on harmonized data. We showed that differences between countries persisted when individual characteristics (age, gender), economic activity and occupations are controlled for. Greece, Cyprus and Slovenia had the highest job strain prevalence, whereas Sweden, Denmark and Latvia had the lowest. Differences in institutional frameworks between countries, such as welfare state regimes, showed that working in a Southern or Eastern European or Bismarkian regime was associated with a higher risk of exposure than working in a Scandinavian regime. This study may help enhance our knowledge of job strain exposures and therefore assist decision-makers in orienting prevention policies in order to improve working conditions at European level.

The results of **Sauze et al. (2010)** invite an investigation into the reasons why Sweden succeeded in reducing exposure of their workers to psychosocial risks. Prevention policies like a systematic analysis of the consequences of organizational changes on psychosocial risks could be part of the explanation. More research has to be undertaken about national prevention policies to validate this assumption.

Jones et al. (2011) state the evidence presented in their paper suggests that employers are able to influence the levels of job anxiety amongst their employees by matching job demands to skills, giving employees more discretion or control over how they do their work and providing a working environment that is perceived (by employees) to be supportive and fair. Further, there is evidence that employee reported measures of job anxiety contain valuable

information which is correlated with management reports of work-related stress. The evidence also suggests that workforce stress and anxiety may be detrimental to workplace performance. However, employers need to consider the costs associated with improving psychological health before it is possible to conclude that there is necessarily a business case for improving employee psychological health.

Haafkens et al. (2011) identify that chronic diseases are increasingly prevalent among people of working age in Europe. In the Netherlands, about one third of the working population (37%) has a chronic disease. Many chronically ill workers (30%-60%) feel more or less restricted by their condition at work, and they are more likely to exit their job prematurely than their healthy colleagues. Early job discontinuation can lead to negative health and socioeconomic outcomes for the individual and increased costs to employers and society. To reverse these problems, recent EU and national social and employment policies are encouraging employers to facilitate continued employment for employees with long-term health problems and disabilities. In recent years Dutch employers have improved absence management programs for employees who are ill. The available statistics indicate that this has led to an over-all decrease in absenteeism and work disability rates in the Netherlands since 2004. Yet, an *increase* of work disability rates has been observed among employees with some chronic conditions. In the past occupational physicians and occupational health services were mainly responsible for the development and implementation health and safety programs in Dutch and European companies. Today, line managers (LMs) and human resource managers (HRM) are playing an increasingly important role in workplace health management. This concept mapping study provided insight into the perspectives of Dutch LMs and HRM on what is needed to facilitate continued employment for chronically ill employees. The extent to which these perspectives are shared by LMs and HRM working in other countries or organizational settings remains to be determined through other studies. Despite this caveat, the study provides important new information about topics that occupational health researchers and planners should take into consideration when developing job retention programs for chronically ill workers.

The conclusion of **Haafkens, Kopnina, Meerman, van Dijk, (2011) (2009)** is that it appears that there is a gap between the formal structures promoting employment and actual experiences of the stakeholders within organizations. Flexible, supportive and open organizational culture emerged as one of the key factors for optimal functioning of the chronically ill employees.

Barnay et al. (2010) and Serrier et al. (2009) have similar policy and societal impacts and will be addressed simultaneously. The economic evaluation of occupational and safety health interventions could play an important role in the orientation of prevention policies. Health economics provides an interesting set of methods implemented in cost-benefit analyses, which could be used in this specific field. Moreover, the evaluation of the costs imputable to occupational exposures, such as psychosocial risk factors, underlines the socio-economic burden of occupational risks. A lot is at stake since the implementation of prevention policies might reduce this burden for society as a whole as well as for employers. Comparative analyses of different prevention interventions might be useful for establishing priorities and trade-offs, based on a cost-benefit criterion. A more in-depth analysis of occupational exposures in the different European countries allows to identify the most at-risk groups of workers and to orientate prevention policies towards such groups. It is also a way to underline the distribution of costs among the different diseases, types of exposures and economic sectors in order to focus interventions on these specific issues.

Serrier (2011) highlights the economic impact of respiratory cancers imputable to occupational exposures. This may help policy makers prioritize resources for prevention policies, given the high burden these exposures represent for society as well as for employers and social security systems.

(c) On working conditions and Deprivation

Cottini (2011) says that knowing how health depends on work environment and employment arrangements is clearly of policy relevance as it provides key equity considerations to complement the efficiency argument advocated by employers. Moreover, the extent of these problems seems to vary across countries according to the legal and social protection for worker's health and safety.

Blasquez (2012) shows that low relative income may contribute to socioeconomic disparities in health. Efforts to eradicate socioeconomic differentials should take into account psychological and physical perceptions and self-esteem in addition to absolute material resources.

Mertens and Beblo (2011) conclude that the costs of the financial and economic crisis have not been limited to the well-documented fall in the domestic products but include psychological costs such as lower satisfaction with life in general as well as job and health in particular – especially of West Germans. Despite Germany's subsidized short-hour work programs to keep people in employment and despite higher employment protection in Germany than in the UK, only Germans showed relatively strong emotional reactions during the crisis years – particularly on reported job and health satisfaction.

Blazquez et al. (2012) observe that research in social sciences has increasingly paid attention to the controversial relationship between income, relative deprivation and health, but findings are ambiguous mostly because of lack of proper data that are able to follow individuals longitudinally. To the extent that individual deprivation frequently extends to different domains – apart from income – our results warn that their consequences on individual health may be overwhelming. We suggest that other life domains should not be neglected and claim for the necessity of a renewed approach where more emphasis should be directed to other dimensions reflecting some minimum standards of living. This may be potentially relevant for policy makers in the design of the most appropriated policies and the most effective targeting of resources intended to improve the health of citizens, and that so far have been almost exclusively focused on income support.

The policy implications of **Cottini and Lucifora (2010)** for health expenditures, work related disability benefits and, more generally, for worker's overall well being are also of some interest. Policy measures should combine renewed efforts to monitor working conditions at workplaces, help firms to improve the overall quality of work, as well as regulating work-related physical hazards and psychological job stressors.

Cottini and Ghinetti (2011) make the following observations and recommendations. From a policy perspective, the result that drinking has a negative impact on mental health is a novel and interesting result, especially for Denmark. Indeed, a report commissioned by the European Union concludes that: however much the continent associates alcohol with Ireland, much of the EU has a serious drinking problem .with Denmark being something of a standout., while, for example, there is now less concern for the consequences of smoking, which is decreasing. This suggest that the interventions aimed at promoting good lifestyle practices and better working conditions should be particularly targeted to specific behaviours (drinking) or conditions (job security), and that they may be particularly effective on those health component (the mental ones) that are increasing in their importance in modern societies and workplaces.

Cottini et al. (2011) observe that voluntary turnover appears to be a rational worker response to adverse workplace conditions, and unless the firm alleviates its adverse workplace conditions directly or mitigates their effects on voluntary turnover through HIWPs, workers exposed to adverse workplace conditions will likely continue to take the exit option. Granted the implementation of HIWPs is not free, however, we are not advocating the implementation of HIWPs without conducting a careful cost–benefit analysis of HWIPs. Since we do not have adequate data to estimate the cost of implementing HIWPs in Denmark, we are unable to conduct a careful cost–benefit analysis. Nonetheless, considering that the cost of voluntary turnover is estimated at close to 30% of annual salary for the average Danish worker, the benefit of HIWPs as a mechanism to mediate the quit-inducing effect of workplace hazards may be considerable.

Cottini (2011) state that policy makers should then make efforts to evaluate the cost, both at the economic and social level, of health problems deriving from an adverse work environment, focusing on the role played by new risk factors such as psychosocial hazards.

Cottini and Buhai (2011) observe that in situations in which the risks are not known to workers, as in the case of health hazards or situations in which the labour market is not competitive, market forces might not operate effectively to internalize the risk. These cases provide an opportunity for cost effective government intervention.

Lucifora and F. Origo (2010) find empirical evidence which confirms that comprehensive smoking bans are an effective policy to fight exposure to tobacco smoke: compared with country rankings in terms of the Tobacco Control Scale indicator, our empirical results actually provide additional support to the effectiveness of comprehensive smoking bans in curbing exposure to tobacco smoke and work-related respiratory problem.

In a similar **Lucifora and Origo (2010)** conclude that comprehensive smoking bans are an effective policy to fight exposure to tobacco smoke, but more effort is needed in trying to identify and measure their potential “side” effects in order to implement the proper policy mix. For example, given our evidence on the unintended increase of mental distress, their introduction should be accompanied by psychological counselling and/or treatment to help those workers quit who used to smoke at the workplace.

The results reported in **Böckerman et al. (2011)** imply that changes in real wages may well counterbalance negative direct effects of turnover on employee well-being in the form of reduced job satisfaction. While the evidence concerns Finland, a country characterized by substantial wage compression, this counterbalancing effect can be expected to be even stronger in countries with a less compressed wage structure.

Kopnina and Haafkens (2009) discovered that the topic of the chronically ill employees is largely invisible to HRM practitioners, line managers and diversity specialists who do not always have the right instruments for implementation of the European or national frameworks. Line managers and human resource managers use their personal opinions for handling the chronically ill employees. Most practitioners are unaware of the impact of chronic illness in their organizations and in employees work life. Organizations vary in the ways in which information about the chronically ill is disseminated, processed and how the decisions are made. When our database is expanded with a wider set of case

studies, we may be able to classify the organizations in accordance to different institutional or cultural characteristics and deduce which arrangements work better in enabling the chronically ill employee to continue optimally functioning at work. The group of chronically ill employees does have some common characteristics, including the long duration of chronic illness; and physical or mental limitations. There are also common needs that most group members can identify with, such as requirement of ongoing medical care, the need for recognition and acceptance, and often the need for more flexible, open and humane organizational culture. Approaching the chronically ill employees as a group may be constructive in both serving the employers' need to retain good workers and the employees' desire to retain job and the need to be treated equally. Greater efforts are needed to translate EU policy as regards to chronically ill employees into HRM policies and practice.

In investigating the determinants of workplace accidents, *Mazzolini (2011)* pays particular attention to highlight the policy implications of our findings. Referring to preventing accidents at work, we find that more stringent duties imposed on employers and workers by occupational health and safety regulations may often lead to an increase of costs in providing occupational health services that is not compensated by a significant reduction of workplace accident rates. Introducing laws in favour of the Workplace Health Promotion (WHP) may provide an alternative policy strategy to incentivize the employers in guaranteeing more safety at work. For instance, a financial aid for the employers who provide innovations in work organization practices may lead to lower probability of an accident and lower costs, for employers, in setting and organizing occupational health services.

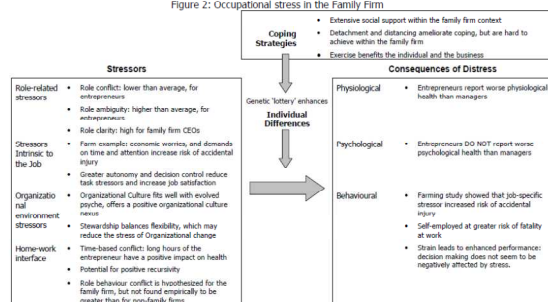
Despite the limitations, *Schneider and Beblo's (2010)* diagnosis for health research in Germany is rather optimistic. Many datasets of high quality with a large number of health-related indicators are available. It seems that at least economic research has not yet exploited them to their full potential.

The findings of *Latreille et al. (2012)* reveal that employees' perceptions of workplace health and safety are adversely affected by previous individual or workplace experiences. To the extent this may be linked to employee well-being and to job satisfaction, employee engagement and ultimately performance, employers need to ensure that they are seen to respond when such issues arise, taking appropriate action to reduce this effect, and possibly providing appropriate support to victims. The evidence also shows that, in conformity with the safety climate literature, measures such as appointing a safety representative, good communication around health and safety and compliance with even cheap and simple regulatory requirements such as displaying a health and safety poster or providing leaflets enhance how safe and healthy employees consider their workplaces.

Drakopoulos et al. (2012) identify that although the legal framework in Greece is quite adequate, there is a need for both prevention strategies and enforcement of the existing safety regulations. The need for more intense and systematic inspections at workplaces, as well as the need in training and OSH education of the labour force is emphasized by the majority of the relevant surveys presented in this study. OSH education should be a priority target so that employees can acquire adequate knowledge on both the risks and the prevention strategies of work-related injuries (Alexe *et al.*, 2003). On the other hand, enrichment of worker protection legislation over the last decade should be combined with stricter monitoring measures by local SEPE offices (Lamprousaki, 2009; Soumeli, 1998) who also have to be reinforced given the significant shortage of staff (Bazas, 2001). While OSH is an issue of interest in current research at the international level, a substantial research gap is observed in Greece. Studies that examine work-related accidents and diseases are quite limited in number and they have the disadvantage that they are of a cross-sectional character. Furthermore, the existing research results should be treated with caution given that the majority of the studies draw information from small samples. In addition, more systematic research should be done on the determinants of injuries and on their effects on job participation and productivity. Priority should also be given to the population groups that report systematically higher incidence of work-related injuries (e.g. migrants, males, middle-aged employees) and to the blue-collar jobs which seem to record the higher incidence of work-related injuries and diseases.

The aim of *Drakopoulou Dodd (2011)* was to develop an initial, tentative conceptualization of health and safety at work, within the family firm context. Special attention has been paid to the family firm owner-manager. The significance of family firms within even the most modern industrial environment was established, and their special importance within the SME grouping underlined. A simple model of occupational stress and health was presented, and utilised as the framework for this analysis. Family firm data and theory was utilised wherever possible, supplemented by material relating to the self-employed, or the entrepreneur, where necessary. Figure 2 illustrates the findings of this review, within the frame of the organizational stress model.

Figure 2: Occupational stress in the Family Firm



With regard to stressors, role conflict appears to be low for entrepreneurs, whilst role ambiguity may be higher than for comparable managers. However, family firm entrepreneurs, by contrast, appear very clear as to their roles, in spite of the multi-function nature of their decision authority. The farming sector, symbolic “home” of the family firm, showed that psychological demands on attention and time can be correlated with greater chance of workplace injury, and that economic anxieties represented a special danger. The high task-control and decision autonomy of the self-employed reduce the incidence of psychosocial stressors related to the lack of such freedom in the workplace. Indeed, family-firm member-employees reported greater autonomy, and the challenge of higher performance demands, as well as greater job satisfaction which these created. Arguments from evolutionary psychology were utilised to propose that the family firm represents an environment to which we are particularly suited, or “fit”. The “stewardship” culture of family firms inhibits generates a comforting continuity, whilst entrepreneurial culture promotes an engaging and challenging flexibility. Thus the stressors generated by organizational change are less likely to be experienced in a negative fashion within the family firm environment, especially given the family’s control over decision relating to the change process. Although entrepreneurs work very long hours, this does not seem to impact negatively upon their health, rather acting as an accumulation of rich experiences which generates overall wellbeing. It is within the sphere of interrole relationships that family firm specificities are the most pronounced. The dramatic conflict which is the dark side of family firms is generally related to some form of family emotional crisis. Outcomes of such conflict can be violent, even fatal. However, there appears to be no overall greater tendency for family-work interrole conflict within the family firms, and, indeed, positive spill-overs between environments have been argued to create virtuous cycles of support, positive affect, and resilience. In terms of individual differences, the genetic lottery seems to generate more divergence between family-firm leading kin groups than is the case where choice drives managerial selection. Coping strategies of special relevance for family-owned businesses include social support, for which family firms are especially well-suited, and detachment, for which they are not. Exercise appears another very suitable coping strategy for family firm managers. Family firm owner-managers can be argued to exhibit heightened exposure to accidents and fatality due to a variety of causes such as industrial sector, longer working hours, greater age, and higher self-selected exposure to risk. Whilst entrepreneurs in general report worse physiological health than other control groups, this is not so for psychological health. However, one study has shown that the greater the strain experienced by the entrepreneur (measured as occurrence of psychosomatic complaints), the higher the chances of long-term survival for their business (Rausch et al 2007). Perhaps some trade-off between personal and business health is accepted by the entrepreneur, particularly if kin-altruism is motivating such sacrifice within the context of the family firm. The study has indicated that the family firm is a rather idiosyncratic workplace, from an OHS perspective. It exhibits special dangers – such as heightened risk of accident and poor physiological health – and special benefits – such as higher task control, social support, evolutionary-fitness, and a richer accumulation of experiences. Given these family firm-specific elements, and the overall importance of family firms to the wider environment, it seems clear that much further research in this area is merited.

The study by **Drakopoulos and Theodossiou (2011)** indicates that a particular type of regulation is necessary for an economy to attain efficient and equitable levels of OSH. The basis of this type of regulation is the actual probability of occupational risk. In this sense, the regulatory activity should take into account the objective probability of accident or illness at work for the particular occupation, and intervene by setting appropriate health and safety standards. Monitoring and enforcing these standards (by the imposition of financial penalties or prosecution to non-compliers) seems to be necessary given the observed tendency of workers’ job risk underestimation.

The research by **Sloane et al. (2011)** demonstrates that evidence based purely on currently employed workers in the EWCS may be biased since it ignores an important ‘healthy worker’ selection effect that may operate. This is particularly acute for analysis of older workers. The selection adjusted findings have important implications for attempts in Europe and elsewhere to retain older workers in employment to offset the effects of population ageing. Workers who remain in employment are typically those in better health; facilitating employment for those who may otherwise may choose not to work is likely to be associated with deterioration in work-related health outcomes, with

potential costs both to individuals and employers, as well as potentially the state in providing health services. This highlights the importance of finding ways to (further) reduce the risks associated with work, as the analysis confirms the vital role of physical, ergonomic and psychosocial exposures.

Economou and Theodossiou (2011a) investigates the effect of recessions as mirrored in the national unemployment rates on fatal and non-fatal work accidents, disaggregating into nine industrial sectors, in a panel sample of 13 European Union countries, for the period 1980-2006. The results suggest that the effect of recessions on the incidence of work accidents are more complicated than the patterns detailed in the literature. For a more accurate picture of the effect of unemployment upon work injuries, the decomposition of unemployment rates into temporary and permanent effects is crucial, since they exert a differential effect upon work-related accident rates. It seems that during the later stages of an economic downturn (or similarly, at the initial stages of an economic downturn) work-related injury rates tend to increase. Therefore, public labour market measures that aim to enhance occupational health and safety (OHS) should pay particular attention to these specific phases of the economic cycles. For example, such measures could be the stricter monitoring of the OHS policy implementation during economic downturns and at the initial stages of economic upturns; the provision of financial incentives to employers during economic recessions to undertake OHS investments, and; the dissemination of information to employees regarding safety measures and individual protection at the workplace. Furthermore, the results imply that cross panel correlation is important. This means that the European Commission directives and legislation, as well as OHS related labour market policies at the European level affect working conditions across member countries. All in all, in view of the evidence provided by this study, policy at the national and the European Union level which aims to improve working conditions and the decrease work accidents should be designed in combination with the macroeconomic policies aimed at evening out the macroeconomic fluctuations.

Economou and Theodossiou (2011b) investigate the effect of unionisation on fatal and non-fatal work accidents after controlling for the country GDP, using a panel sample of 10 European Union countries, for the period 1982-2006. The study takes into account the time persistence in work injuries and the endogenous nature of the work injuries – union density relationship, by using GMM regression models. After controlling for endogeneity, both fatal and non-fatal work injuries decrease as union density increases. The empirical findings indicate that endogeneity is a shortcoming that affects the union density-work accidents relationship and should be taken into account in relevant studies. The paper highlights significant policy implications regarding the reduction of work-place injuries. Overall, the results imply that union density is conducive to reducing work place injuries. Union power seems to be an important determinant for the success of unions in occupational health and safety negotiations. Increased membership improves the ability of the unions to be effective in achieving improvements on occupational health and safety and hence the improvement of working conditions. All in all, it seems that unions act towards the improvement of workplace safety and policy makers should facilitate this effort and encourage union activities, under the scope of the improvement of working conditions.

Ferrer-i-Carbonell and Theodossiou (2012) investigate the preferences of the employers and employees regarding aspects of *occupational safety and health* (OSH). The provision of OSH is determined by the interplay of preferences of workers and employers. Hence, the need for a thorough understanding of the determination of the preferences of both workers and employers on OSH is of critical importance in order to identify areas of required action and to set priorities for policy initiatives on improving health and safety at work. The need to focus on health and safety is important since the interplay of preferences of workers and employers need to be completed by OSH strategies designed to address the consequences of a continuous adaptation.

Bender and Theodossiou (2011) Further work investigated potential pathways in which this linkage between performance pay and health might lay. While performance pay is found to increase work time, it does not seem to be correlated with a limited number of potentially healthy leisure activities, except for increases in drinking and restaurant meals. A more consistent pattern was found with a series of measures of stress, where duration models found that increases in the time spent in performance pay increase the hazard of five measures of stress. Performance pay can generate a variety of efficient labor market outcomes. However, the findings here are firmly in the camp of a potential unintended consequence of performance pay. Like other research that finds that performance pay can lead to workers, for example, focusing on quantity rather than quality or overusing physical capital, long term exposure to performance pay is related to worse health, suggesting that firms may face increased health insurance or workers compensation costs (e.g. Freeman and Kleiner, 2005). Perhaps to mitigate these increases in costs, future research, using more detailed health data, should focus on identifying the pathways that performance pay can affect health. It may well be through increased stress, as suggested in the results here, but this should be more explicitly examined with more detailed data.

Main dissemination activities and exploitation of results

The project results are presented in meetings, conferences, and symposia; press releases and project web pages, communications to relevant mailing lists on the internet; newsletters are regularly posted to a mailing list of end-users established during the early meetings of the project providing information on the progress of the project and summarising and highlighting major reports and published papers; and a final conference (January 2012) and a reports with recommendations. Some of the results produced are written in form suitable for publication in the mainstream scientific literature, for example, peer-reviewed journals.

The results of the project were also presented in the Final Conference. They were available to a wide range of end-users and stakeholders such, national policy makers and regulatory authorities. One of the major functions of the final conference was highlight the findings of the project. Representatives from the national governments of the partners involved and European Union officials, as well as other interested parties including human resource managers, representatives of employer associations and trade unions, were invited to the final conference. Particular emphasis was given to secure the participation of employers (or their representatives) of SMEs. The results are of direct interest to those partner institutes involved in the implementation of European and national programmes on health and safety at work initiatives. The results produced provide useful information for other projects involved with similar issues in many European economies and other studies aiming at enhancing the health and safety at work. The database and the CIS outcomes of the project are a useful resource for future research on health and safety at work and they are available for consultation with free access through the Internet.

The co-ordinator maintains a web page providing information to a wider audience, including the general public, the research and health and safety at work management communities. Regular targeted press releases highlighted the findings of the research and the activities of the Project. The project adopted a comprehensive dissemination strategy aiming at targeting all the potential end-users including:

Reports to the EU

Publications in international peer-reviewed journals.

Institutional reports and working papers

Presentations of results in meetings, conferences, and symposia where end users and stakeholders will be invited

Press releases and newsletters to inform the general public and the end users and stakeholders

Project web page with open access to the general public and the end users and stakeholders

Project CD-ROMs

A final conference where end users and stakeholders had active participation

All data, tools and concepts developed by this Project are considered public goods and are made available through the HEALTHatWORK web portal. Members of HEALTHatWORK have archived data and make tools available beyond the duration of this project. Public participation is mainly through the HEALTHatWORK web portal where interested persons can review the project, attach their own web sites if relevant to HEALTHatWORK, or discuss issues with experts in the relevant forum. Public awareness is raised through traditional means such as press releases demonstrating success stories and guiding lay persons to the HEALTHatWORK web portal.

Major tools of the dissemination are:

i) Direct contact

A list of contacts is prepared from the beginning of the project and regularly updated. Policy makers (National government and EU officials or other interested officials are identified as well as representatives from the employer's (with particular reference to SMEs) associations and trade unions.

ii) The Web Site: www.abdn.ac.uk/haw

The web site is a central tool for communication. This web site acts as an information platform on health and safety at work practices and indicators. It includes the results of the project reports. It allows consulting the most relevant publications on health and safety at work

iii) Press releases

Press releases and Newsletters are published at regular intervals. They are distributed to the research community and other EC project researchers.

iv) Final Conference

The final results were disseminated at the final conference where policy makers, national governments and EU officials, scientific communities on issues of health and safety at work, human resource managers, representatives of employer associations (including SMEs) and trade unions and other interested end users were invited.