

# Contexts and arrangements for occupational safety and health in micro and small enterprises in the EU – SESAME project

**European Risk Observatory  
Literature Review**

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## Foreword

Micro and small enterprises (MSEs) form the backbone of the European Union economy and are seen as a key driver for economic growth, innovation, employment and social integration. About half of the European workforce is employed in MSEs. Effective occupational safety and health (OSH) management in MSEs is essential to ensure both the well-being of workers and long-term economic survival of these enterprises. Statistics and studies show, however, that the safety and health of many workers employed in MSEs is poorly protected and that ensuring good OSH management in MSEs remains a significant challenge. This problem is acknowledged in the Strategic Framework on Health and Safety at Work 2014–2020, adopted by the European Commission, which identifies the enhanced capacity of MSEs to put in place effective and efficient risk prevention measures as one of the key strategic objectives for safety and health at work.

Responding to the existing gap in OSH requirements and workplace practice, EU-OSHA launched a wide-ranging, three-year project (2014–2017) with an overall aim to identify key success factors in terms of policies, strategies and practical solutions to improve OSH in MSEs in Europe. The project, commissioned to a group of researchers constituting the 'SESAME' (Safe Small and Micro Enterprises) consortium, has three main objectives. It will provide evidence-based support for policy recommendations, contributing to the current discussions on the regulation on OSH in Europe with regards to small enterprises. Moreover, it will identify workplace-level good practices in assuring good OSH management, and will facilitate further development of the existing or new practical tools, including the Online interactive Risk Assessment (OiRA) tool. Finally, the findings will inform future research aiming to expand knowledge on the determinants of good OSH in MSEs operating in dynamically changing economies.

This report presents findings from the first phase of the project, which reviewed up-to-date knowledge on OSH in MSEs, identifying what is currently known and where the gaps are, including the degree of existing OSH arrangements and outcomes, as well as contextual issues such as regulatory environment and available support. As such, it provides the project with a solid research base on which the next steps towards supporting policy recommendations and exchange of good practice can be built. In pursuit of this, the subsequent project phase will look deeper into MSEs to understand, from the perspective of employers and workers, the problems and concerns associated with OSH at workplace level. This will be followed by further investigation involving policy-makers, social partners and OSH experts to identify key elements of successful policies, strategies and workplace interventions. The findings that support policy recommendations and that demonstrate good practice, facilitating better OSH in MSEs, will be published and disseminated by EU-OSHA over the next years.



Christa Sedlatschek

Director





## Executive summary

Micro and small enterprises (MSEs) account for nearly 99% of enterprises in the European Union (EU) and employ nearly 50% of EU workers. Given these numbers, and the significant role such enterprises play in society as well as in the EU economy, the importance of effective means to prevent harm to the health and safety of workers in these firms should be apparent. Bearing this in mind, the aim of this review is to contribute an informed EU-wide analysis of current knowledge concerning the nature and experience of health and safety in work in micro and small enterprises. It reviews research concerning the nature of micro and small firms and their role in the EU economy, measures of the known extent of mortality and morbidity associated with work in them and the arrangements made in these enterprises to prevent this harm to their workers, while taking proper account of the structural, economic and political contexts in which this occurs in the Member States of the EU. It is intended to inform discourse on future policy development in this important area, while at the same time helping to identify important gaps in current understanding.

The approach taken in the review may be distinguished from previous studies in several important ways.

*First*, it focused on the relevant research literature and used robust selection criteria in relation to the material reviewed. We have taken a critical realist approach in our consideration of this literature, within which we have used the technique of *realist evaluation* to discover the extent to which it adds to knowledge concerning ‘what works, for whom and in which contexts’ in our examination of the evidence of arrangements made for health and safety in micro and small firms and the strategies and resources available to support them.

*Second*, much of the research on occupational safety and health (OSH) in smaller organisations is primarily concerned with addressing the experience and needs of the owner-managers, informed by an assumption of shared interests between them, their company and the workers they employ. However, the wider literature concerning the employment relationship and the relations of production in small companies suggests these assumptions are not entirely valid. We have therefore also directed our review towards examining research concerning social, economic and regulatory contexts in which the experience of work in MSEs is situated. In adopting this focus, it has become clear that, in contrast to research and writing on larger organisations, there has been only limited study of these elements in MSEs. This is an important omission for several reasons, including the challenges that so-called ‘hard-to-reach’ micro and small firms present for regulation and regulatory inspection; the impact this has had on the redesign and refocus of regulatory strategies; the extent to which these strategies are ‘smart’ (for example, in the way they exploit the value chain positions of micro and small firms) in extending the reach or effects of regulation; and the political and economic contexts in which redesign and refocusing has taken place and its relationship to debate concerning regulation, risk and regulatory burdens on small and micro firms. We have therefore sought to provide a more *robust socio-legal analysis* of the experience of OSH and its regulation in micro and small firms than has been the case in previous reviews.

*Third*, we have taken some account of the implications of the national contexts in which MSEs are situated in different Member States of the EU and noted that there is evidence of variations between Member States in the presence and quality of arrangements for OSH in micro and small firms. In our analysis, we have clustered EU Member States according to shared features of economy, the structure of work, regulation and public administration to help provide contexts for understanding these differences in ‘what works, for whom’ in OSH arrangements in MSEs in the different Member States of the EU.

In summary, the review explores the rationales, mechanisms and realities shaping the experience of OSH for workers in MSEs in ways intended to be useful for both science and policy. It seeks to critically review the current knowledge on arrangements and outcomes in relation to OSH in MSEs, the strategies in place to support them and their social, economic and regulatory contexts, and to consider the implications of gaps identified in this knowledge for future research.

## Key findings

Our analysis confirms the importance of micro and small firms in the economy of the EU. As well as their important societal role, this is seen directly in terms of their numbers and as a source of employment for a substantial part of the EU workforce. In addition, it is seen more indirectly in their support for the business and productivity of larger organisations with which they are linked in value chains, through various outsourced activities and in contracting and subcontracting relationships. It is also clear that, as a result of the linkage between bundles of organisational and business strategies and the multifaceted limitations on resources available to them, a substantial proportion of these MSEs can be seen to employ 'low road strategies' to their economic and business survival. The many workers that are employed in these enterprises are most likely to experience poorer working conditions, lower job quality and proportionally greater risks to their health, safety and well-being.

Although there are considerable uncertainties in the data, which make reliable comparative study difficult, there is nevertheless good evidence in the research literature that the occurrence of serious injuries and fatalities is proportionally greater in smaller firms than in larger ones. This is notwithstanding the undisputedly strong influence of sector on OSH outcomes. While evidence of size effects is more difficult to evaluate concerning working conditions and work-related health effects, there are many examples of poor outcomes here too, and there is certainly nothing in the literature to suggest that overall work in MSEs is healthier or safer than in their larger counterparts. There is therefore good reason for concern about the arrangements for health and safety in a substantial proportion of micro and small firms. This is a concern that applies to a greater or lesser degree across all the Member States of the EU and gives little reason for complacency among any of them.

Our findings suggest there are a set of socio-economic and regulatory factors that act in concert to raise the risks to health and safety experienced by workers in a substantial proportion of smaller firms to levels greater than those experienced in larger enterprises in comparable sectors. In brief, numerous studies identify reasons for poor uptake of arrangements for managing OSH in these enterprises. They include:

- the weak economic position of many MSEs and the low investment they are able to make in OSH infrastructure;
- the limited knowledge, awareness and competence of their owner-managers in relation to both OSH and its regulatory requirements;
- limited capacity to manage their affairs systematically; and
- their attitudes and priorities, given the limited resources at their disposal and their concerns for the economic survival of their business, in which OSH has a low profile.

We explored these underlying weaknesses further by examining the research on workers' experiences, labour relations and regulation in relation to OSH. We found the 'general and multifaceted lack of resources' for OSH experienced in many MSEs to be embedded in wider social, economic, regulatory and labour relations contexts and within the structures and business relations in which MSEs are situated. Focus on wider literature addressing these matters helped draw attention to the heterogeneity of MSEs, not only in terms of their institutional variety, but also in terms of the varieties of experience within them and, especially, the often very different experience of workers from that of their employers in these firms.

We further concluded that research on the regulation of OSH in MSEs painted a portrait of generally limited engagement and weak compliance practices on the part of owner-managers in these firms, in which those relating more specifically to poor OSH practice were situated. Again, the situation is complex and the heterogeneity of MSEs makes for a mixed picture. We noted typologies found in the literature that attempt to describe compliance behaviours and the reasons for them, which further confirm that many MSEs pursue 'low road' strategies towards their survival, among which exposures that are harmful for workers' health and safety are likely to be disproportionately experienced. It is often also among such firms that the regulatory research identifies greater prevalence of non-compliance. We found an emergent set of regulatory strategies with the potential to address these challenges, which parallel current understandings in the academic literature concerning the advantages of regulatory mixes in new approaches to economic governance and regulation. However, we also note that the research evidence for their success is limited.

Turning to strategies to support the development of appropriate arrangements for OSH in MSEs, we found some evidence concerning the effectiveness of specific interventions. Overall, however, our findings indicate that research in this area remains weak in its analysis of the contexts in which interventions take place, and concerning their potential for transfer. This leads us to conclude that, despite a burgeoning literature addressing various specific interventions, there remains much room for further evaluation of these wider issues before a proper understanding can be achieved of ‘what works, for whom and in which contexts’.

Our findings suggest national contexts are important additional determinants of workplace arrangements and their outcomes. In our analysis of the Second European Survey of Enterprises on New and Emerging Risks (ESENER-2) data, Member States in which regulatory requirements focusing on processes of OSH management were of the longest standing generally report having greater numbers of good OSH management practices than those in which such requirements were of more recent origin. However, as we argue in the full report, this observation oversimplifies what is likely to be a more complex reality, in which these national differences cannot be explained simply by the longevity of the shift from prescriptive to process-based regulation in each Member State. They are better understood by further exploration of the underlying determinants of these changes and the roles played by economic actors, the state and civil society in bringing them about, and we allude to these determinants in more detail in the report.

The literature suggests, for example, that among the clusters of countries we have used for the purpose of our analysis, there are differences between the capacities of MSEs in Northern and Western Member States to respond effectively to business challenges associated with globalisation and those in MSEs in Southern and Eastern EU Member States, which in turn may influence the proportions of such firms pursuing ‘low road survival strategies’ in different Member States. Such differences are unlikely to be solely the result of innate features of MSEs, but rather of the interaction between these enterprises and the social, political, regulatory and economic contexts with which they are surrounded. While wider research has focused on the consequences of these contexts for issues such as collective bargaining and wage determination, there is little study of their role as influences on OSH arrangements and outcomes.

## Reflections on the findings

Many sources describe MSEs as a significant element of EU society and its economy. The different ways of measuring their contribution serve as a reminder that they not only are a source of significant employment, but also support the performance of larger organisations, often enabling them to achieve ‘economic efficiencies’ as cost and risk burdens are outsourced to these smaller companies. It is also a further reminder that in many such situations the consequences of such risks are often invisible to systems for reporting and recording, because they fall outside their remit. The latter is even more the case if it is remembered that the increasing informal economy in the EU is largely populated by small and micro companies.

Contrasting accounts are found in the literature on the role of MSEs in the economy. Some, which focus on enterprises especially active in high value-adding activities, present them as entrepreneurial success stories and significant players in revitalising economic growth. Others characterise the activities of many as ‘low road’ survival strategies in which poorly resourced businesses operate on the margins of the economy, often in markets with low entry barriers, and frequently as subcontractors or in other dependent positions in relation to larger companies where they have little decision latitude. Further accounts portray work in MSEs as highly rewarding, socially integrated, flexible and varied, undertaken through choice by individuals with strong skill sets, and commanding not insignificant labour market power. However, others suggest a preponderance of poor-quality jobs undertaken by relatively poorly educated or otherwise disadvantaged workers with low skills, significant vulnerability and insecure employment. Finally, as we have outlined above, robust research analysis demonstrates an inverse relationship between establishment size and serious injuries and fatalities, while work on less reliable indicators (such as lost-time injuries and the like) sometimes suggests different patterns, such as better performance among micro firms than among small ones.

These polarised views of MSEs are explained by limits in the availability of reliable data and the heterogeneity characterising MSEs as a group. Such heterogeneity indicates a need for caution before generalising about MSEs. However, some broad categorisations are important and necessary if policies are to be effective. Our findings are clear in this respect. In the case of arrangements for the health, safety and welfare of workers in MSEs, both the older analytical literature and recent EU-wide survey findings on these OSH arrangements consistently demonstrate that they are considerably less well developed in smaller workplaces than they are in their larger counterparts, and this holds true regardless of sector or country. While not all of these enterprises can be so described, a substantial proportion pursue ‘low road’ survival strategies and many operate in sectors traditionally regarded as presenting high risks of physical injuries and ill-health. There is further evidence of a relationship between these observations and the disproportionate levels of poor health and safety arrangements and outcomes and poor job quality among a substantial proportion of these firms. These are fruitful areas for further research and also lead to reflections on their policy context.

## The policy context

It is not difficult to notice that the dominant economic policies in the EU and its Member States during recent decades position MSEs as fairly central to economic growth and have attempted to enhance this role with support from economic and regulatory policies aimed at promoting flexibility and removing what are regarded as unnecessary constraints on business. While such policies may contribute to increased freedoms from OSH rules, at the same time they arguably help in promoting the ‘low road’ strategies pursued by a large proportion of MSEs, because they make it easier for weak and poorly resourced firms to survive at these levels. This helps create conditions for poor OSH arrangements, which in turn lead to poor OSH outcomes. Deregulatory (or re-regulatory) policies that aim at removing regulations, exempting enterprises below a certain size from their coverage or modifying their application are set within the aims of wider policies that are intended to reduce the regulatory role and institutions of the state more generally, and to encourage the growth of market and other forms of private regulation in taking over this role. As a result, many of the institutions of public regulation, including those established to ensure surveillance of measures to protect workers’ health and safety, have reduced in size and coverage in recent years. At the same time they have been obliged to direct their diminishing resources at increasingly complex and divergent scenarios that remain subject to regulation, as the effects of the same economic and regulatory policies also make for increases in their prevalence by encouraging and supporting outsourced, fissured and fragmented organisation of work in the restructured and reorganised economies of the EU. Despite a generally improving trend in injury rates overall, it is difficult to escape the conclusion that there are connections between these structural changes and the poor health and safety experience of many workers in MSEs and especially those employed in enterprises pursuing the ‘low road’ survival strategies we have discussed. Viewed in this context, for example, it is not entirely clear how the EU Strategic Framework for Occupational Safety and Health, introduced in 2014, will achieve its stated intention ‘to improve implementation of existing health and safety rules, in particular by enhancing the capacity of MSEs to put in place effective and efficient risk prevention strategies’.

Moreover, our findings indicate that these developments present regulators, who remain charged with ensuring compliance from duty-holders in MSEs, with something of a challenge to their regulatory ingenuity, which they are obliged to meet in most Member States, with fewer resources available to them than previously. Wider research on regulation makes clear that the market and voluntary approaches to regulation advocated by economic policy have only limited impact in relation to MSEs that have neither the will nor the capacity to implement them. Where price and delivery demands dominate market regulation and long supply chains prevail, research on compliance behaviours has shown there is little pressure on larger organisations to be concerned about the regulatory or reputational risks of their business strategies in relation to MSEs situated at the ends of their supply chains. The means to address these challenges discussed in the literature, such as the introduction of regulatory mixes, placing duties on the heads of supply chains, combining market-based incentives with regulatory duties, making greater strategic use of means to heighten reputational risks, and so on, are all innovative ways of seeking compliance from ‘hard to reach’ duty-holders such as those in small firms.

However, as we have observed, our findings indicate that the current evidence of the extent to which such approaches are effectively used is limited.

## Further research

Our findings suggest implications for further research that are essentially of two main and related types. Firstly, a number of gaps exist in present knowledge concerning OSH in MSEs in the EU that might be usefully explored in future studies. Secondly, there are a number of issues of quality and coverage of previous research that could be fruitfully addressed in future studies. We outline these in the following sub-sections. They are presented in greater detail in the conclusions to this report and in its recommendations.

### *Analysis of quantitative outcomes*

We have shown that long-established and robust analysis provides strong evidence of an inverse relationship between establishment size and rates of serious and fatal occupational injuries. There is circumstantial evidence suggesting a similar inverse relationship between size and good performance for exposures associated with other types of injuries, work-related ill-health, the quality of jobs and the work environment. However, the quality and availability of the latter evidence is weak and varies between Member States. There are also signs that the national surveys that generate it are declining in number and quality. For the majority of Member States, no such analysis exists. Given the policy issues outlined in the previous section, and especially achieving a balance between support for the role of MSEs in the economy and protecting the health, safety and welfare of the millions of workers employed in them, the availability of reliable data for the analysis of OSH outcomes is important and would provide material for better analysis of the effects of size and sector.

The gist of our findings is that, for a substantial proportion of workers in MSEs, risks to their safety and health are elevated by a combination of inadequate arrangements made to protect them in scenarios in which there are significant hazards, and especially in enterprises that pursue so-called 'low road' strategies to ensure economic survival. However, there are clearly other MSEs in which less hazardous work is conducted and also those where 'low road' survival strategies are eschewed in favour of ones leading to greater business success. There are some suggestions in current research that risks may be better managed within this group, with positive OSH outcomes linked to business success. However, accurate data are not forthcoming. Opportunities for further study of all these matters would be facilitated by more in-depth and comparative analysis of better quantitative data reflecting sector and national experiences.

### *Context*

There are good reasons to move beyond the limited perspectives found in much of the specialist OSH research on MSEs, which tends to be largely framed in terms of the interests and experiences of owner-managers. New research needs to take better account of the quality of *workers' experiences* in relation to OSH in MSEs. This is not to suggest that owner-managers need to be studied less — OSH research has quite rightly identified their pivotal role. Nor does it mean that the business and economic contexts of small and micro firms can be ignored. But it is important to acknowledge that study of the contexts and determinants of workers' experiences requires an appropriate conceptual framework and methodology that we have found to be missing from much specialist OSH research. There are several examples of studies in the wider sociological and labour relations literature that provide some useful indications of how this might be achieved.

It also needs to be acknowledged that 'going upstream' implies understanding the effects of business, economic and regulatory contexts in which OSH is situated in MSEs. There are consequences for OSH that arise from the dependency dictated by the business position of MSEs, which a substantial body of research indicates have profound effects in determining the nature of OSH outcomes within wider



contexts of regulation and governance. There is a growing body of literature exploring these effects on the conditions under which work takes place and their implications for its governance and regulation, although it does not usually address MSEs directly. There is also a rapidly growing body of work pointing to the role of the informal economy, undeclared work and economic migration, the effects of all of which are probably disproportionately experienced in MSEs and especially those MSEs following 'low road' survival strategies. There are therefore significant gaps to be filled with further research here too.

## **Intervention**

The gaps we have found in the understanding of the relationship between intervention, effectiveness, transferability and the wider regulatory and economic contexts governing these matters point to the need for future research that moves beyond the largely descriptive narratives of programmes, strategies and interventions and provides more appropriate and robust *evaluation of their uptake and effects* in relation to sector characteristics and context.

We have also noted that intervention research on MSEs focuses mostly on arrangements to address conventional risks associated with chemical, physical or biological exposures. There are few studies that examine interventions aimed at supporting the prevention or control of psychosocial risks in MSEs. In particular, there is a need to further explore the possible relationships between job quality, working conditions and psychosocial risks that are suggested in both high-level aggregated quantitative data and more in-depth qualitative studies of 'lived-in' experiences within small and micro enterprises, and to determine whether or not there is a role for intervention to improve outcomes in relation to the mental and emotional health of workers in these situations.

## **National contexts**

Our review emphasises the importance of national contexts in shaping OSH arrangements and their outcomes in MSEs. This applies equally to the effectiveness of intervention. It is clear that neither exists in a vacuum, but are parts of the wider national 'health and safety systems' in which they are situated in every country. We think that the approach we have adopted to clustering countries in the analysis presented in this review is a useful model for further and more detailed comparative analysis of the determinants of arrangements for OSH in MSEs and the effectiveness of interventions to improve them.

## **Conclusions**

In conclusion, our review highlights the presence of weak arrangements and poor outcomes on OSH found among a substantial proportion of MSEs and identifies reasons for them found in the research literature. It indicates the role played by economic and regulatory contexts in this respect, as well as that of policies at EU and national levels in relation to these weaknesses. It indicates what can be learned from previous research on interventions and resources necessary to help improve these arrangements and outcomes. Finally, it also identifies a number of gaps in our understanding of these matters and the contexts in which they occur. Further inquiry in these areas is justified and would be beneficial. We think this would be most usefully explored through future field research in MSEs through detailed nationally based studies that include more in-depth further analysis of the wider regulatory, economic and policy contexts identified by the present report as significant determinants of OSH arrangements and outcomes in MSEs.

# 1 Introduction

This report presents a review of the experience of occupational safety and health (OSH) arrangements and outcomes in micro and small enterprises (MSEs) in the European Union (EU) and the factors that determine them, along with a critical analysis of the range of strategies and resources available to support their improvement. It does so with an analysis of the available research literature on OSH in MSEs, which is situated within, and which takes account of, the wider economic, political, social and regulatory contexts in which MSEs operate in the EU. This introductory chapter outlines the aims, rationale and structure of the review.

## 1.1 Aims and rationale

Research studies of varying quality contribute to a burgeoning literature on health and safety in small and micro firms. This work has been the subject of several previous reviews (see, for example, Walters, 2001; Champoux and Brun, 2003; Hasle and Limborg, 2006; MacEachen et al, 2008; Breslin et al, 2010; Croucher et al, 2011). The present review situates itself within the context of current policy on the role of micro and small firms in the EU economy and seeks to inform discourse concerning its development in relation to OSH.

MSEs account for nearly 99% of enterprises in the EU and nearly 50% of workers in the EU are employed in them. They are also where most new jobs are created; for example, between 2002 and 2010, 85% of all new jobs were created in small and medium-sized enterprises (SMEs) and micro companies created nearly 6 out of 10 of these (de Kok et al, 2011). Given their number and the number of workers employed in them, as well as their diversity, the importance of effective means to prevent harm to the health and safety of workers in these firms is apparent. However, for some years, arrangements made for workers' health and safety within many of these enterprises and the resulting outcomes have been identified as sources of concern, for which many good reasons have been documented. Set against this, however, in other such enterprises, risks of work are seen to be low, social relations are claimed to be good and competence and innovation are highly developed. For many workers, having a job in such a small or micro firm is said to be a preferred choice. This paradox (reflecting as it does the heterogeneity of small and micro firms), along with a parallel concern among policy-makers to stimulate economic growth according to neo-liberal orthodoxy and the significant role attributed to MSEs in this process, has led to a degree of ambivalence in the direction of policy concerning support for and regulation of health and safety in these enterprises. This is acknowledged in the new EU Strategic Framework on Health and Safety at Work 2014–2020, in which enhancing the capacity of MSEs to put in place effective and efficient risk prevention strategies is identified as one of three major challenges.

One of the aims of the present review is, therefore, to contribute an informed EU-wide analysis of current knowledge concerning the nature and experience of risk to health and safety and its occurrence in work in small and micro enterprises. It aims to help provide a better understanding of how risk is most effectively addressed in relation to these enterprises, while taking proper account of their structure, operation and context. In so doing, it further aims to inform discourse on future policy development in this important area, while at the same time helping to identify important gaps in current understandings.

There is a wealth of routinely collected quantitative information concerning economic indicators of the size and position of small and micro enterprises in the economy of the EU, as well as a substantial body of analysis of health and safety outcomes experienced by those who work in them. This information is reviewed in the present report with two main objectives in mind. The first is to present some measure of the scale and effectiveness of arrangements necessary to protect workers in these enterprises. The second is to inform awareness concerning the limitations of these data and the gaps in knowledge in this respect. It is not the intention of this review to present an exhaustive account of statistical sources on these matters. Instead, this report aims to provide a critical analysis of scale and outcomes as the background to analysis concerning the experience of work in MSEs. In this way, it seeks to identify the challenges for health, safety and welfare that they represent and the reasons for them, as well as the strategies in place to regulate and manage workplace risk.

In undertaking these tasks, the approach of the present review is distinguished from previous studies in several important ways. To begin with, there are some important issues of *research design and conceptualisation* that are relevant. In reviewing the large and particularly diverse literature on OSH in MSEs, it is important to adopt an approach to its evaluation that is robust but at the same time pragmatic and which has regard to what is *useful* in the sources examined.

Given the plethora of writings on health and safety in small firms in recent decades, we have used fairly robust selection criteria in relation to the material we have reviewed. We thought it inappropriate, for example, to attempt an uncritical review of the full range of the literature concerning the supports and resources for improving OSH arrangements and outcomes in small firms in the EU. Most of the grey literature in this field is not evaluative and in the majority of cases it is either insufficiently scientifically robust or too narrowly focused to be useful in understanding the issues in which we are primarily interested. We have, therefore, excluded grey literature from the coverage of the review in the present report.

We have noted four general features of previous work from which we aim to distinguish the present account. Firstly, the research literature, like the grey literature, contains an unusual proportion of largely descriptive accounts of programmes, strategies and interventions focused on support for ‘managing’ health and safety in MSEs, with only limited *evaluation of their uptake and effects*. Secondly, this research is primarily concerned with addressing the experience and needs of owner-managers of MSEs, with far more limited study of the perspectives and experience of workers. Thirdly, and in contrast to research and writing on larger organisations, there is only limited study concerning the socio-legal and regulatory contexts of OSH in MSEs. Fourthly, while it is widely acknowledged that national economic and regulatory contexts are likely to influence OSH arrangements and outcomes in MSEs, existing research rarely distinguishes their effects in analyses of the supports and barriers to effective arrangements, and comparative studies are rare. While there are good reasons for these features of the literature, we think it is important and necessary to pay attention to them if informed policy decisions are to be taken concerning OSH in small and micro firms. The aim of the present review is, therefore, to adequately reflect these perspectives and to identify the gaps in the research literature that are revealed by this focus. We elaborate a little more on each of these issues below.

*Appropriate evaluation* — Having noted the limited role of evaluation in previous work, in the design of the present review it was important to decide what kind of evaluation was most appropriate. A small number of previous studies have used techniques of systematic review (see, for example, Breslin et al, 2010). These tend to place strong emphasis on a scientific/biomedical methodological basis for their evaluation. This allows the interrogation of the research to address specific questions such as those concerning quantitative measures of the effectiveness of interventions, and it ensures a robust evaluation with good comparability through tight selection criteria. In many circumstances, this is a valuable exercise. However, in cases where it is used to evaluate diverse and multi-disciplined literature, such as that on OSH in small firms, two major weaknesses are apparent. Firstly, very few studies are deemed to meet the scientific/biomedical evaluation criteria used and thus selected for a comparative evaluation and, secondly, it is a poor technique for capturing insights that emerge from diverse, multi-disciplined and mainly social science research.

We have thus reasoned that other methods are more appropriate to take account of the richness and multi-disciplinary nature of the available sources of published research on OSH in small and micro firms. They are necessary to gain a more complete understanding of their challenges for healthy and safe work, and the conditions under which strategies to address them are likely to be most effective, while at the same time being systematic and robust in comparative analysis. Taking account of the experience of research in the social sciences shared by the research team, we have situated our analytical focus within the discipline of critical realism. By doing so, following Maxwell (2011), we maintain ontological realism (there is a real world that exists independently of our perceptions, theories and constructions) while accepting a form of epistemological constructivism and relativism (our *understanding* of this world is inevitably a construction from our own perspectives and standpoint), thus acknowledging that there is no possibility of attaining a single, ‘correct’ understanding of the world that is independent of standpoint.



Within this broad framing of our thinking, our approach to evaluation is that of *realist evaluation* (see Pawson and Tilley, 1997; Pawson, 2006, 2013), which some of us have already applied to analysing interventions in OSH in small firms (see, for example, Hasle et al, 2012a, 2014). This approach essentially addresses questions concerning ‘what works, for whom and in which contexts’. Informed by this approach, our review interrogates the research literature on OSH in small firms in order to present a fuller exploration of outcomes and what influences them. It examines the contexts in which they occur, helping to evaluate investigations of prevention strategies, including the ways in which these strategies and the resources they use for influencing improvement in health and safety in small and micro firms are deployed, and how they are adapted to the conditions and prerequisites of different target groups (such as, for example, in different sectors). This has made it possible to identify gaps in knowledge concerning the role and value of current strategic approaches and the resources deployed to deliver them.

*What about the workers?* — As a recent report from the European Foundation for the Improvement of Living and Working Conditions (Eurofound, 2014) has acknowledged, among research studies on MSEs, there is relatively little account given of the relationship between the health, safety and welfare of workers, the implementation of fundamental workers’ rights and the role played by social dialogue in helping to determine workers’ experiences of health and safety. Generally, as pointed out above, the focus of most studies on OSH in MSEs is on the experience and needs of owner-managers rather than on that of their workers. There are, of course, good reasons for this focus, not least that authority in micro and small firms rests with owner-managers disproportionately and they are often the sole conduit through which interventions access the workplace. But a consequence of this is the primacy of the managerial standpoint evident in the literature and a parallel invisibility of the experiences and concerns of workers. It is fundamental to research and writing on the sociology of workplace health and safety that its approach should be centred upon workers themselves, their experience of work and the social and economic contexts in which work takes place, which help explain its effects on their health and welfare, as well as the strengths and weaknesses of measures to prevent harm. The approach taken in the present review has, therefore, anticipated this weakness in the current literature and sought to address it by exploring, where possible, further sources of knowledge on these matters found in the wider research literature on the sociology of work, working conditions and labour relations more widely in smaller enterprises. In so doing, the review identifies and explores further gaps in the understanding of the experience of OSH in MSEs and the supports and constraints on its improvement.

*Socio-legal perspectives and wider regulatory contexts* — A further area of neglect in the previous literature concerns *robust socio-legal analysis* of the experience of OSH and its regulation in micro and small firms. This is an important omission for several reasons. Not least, these include the challenges that so called ‘hard-to-reach’ micro and small firms present for regulation and regulatory inspection; the impact this has had on the redesign and refocus of the regulatory strategies of many regulatory authorities and their inspectorates in the relatively recent past; the extent to which these strategies are ‘smart’ (for example, in the way they exploit the value chain positions of micro and small firms) in extending the reach or effects of regulation; and the political and economic contexts in which such redesign and refocusing has taken place and especially their relationship to debate concerning regulation and risk and the question of regulatory burdens on small and micro firms — to name but a few issues in current discourse on regulation and governance. Relatedly, growth in undeclared work, which also often involves small and micro firms and which largely escapes conventional regulatory oversight, has especially significant implications in some EU Member States but is a growing regulatory challenge for most and is relevant to the discussion of regulatory approaches to OSH in small and micro firms. In this review, therefore, with the aim of both helping to inform our evaluation of ‘what works, for whom and in which contexts’ and identifying gaps that might be filled with future empirical work, we have placed emphasis on exploring the extent of relevant socio-legal analysis in the research literature.

Related to this aim we have also sought to inform the review with an exploration of the emergent literature on governance and regulation in OSH, in which the role of economic dependency and the business position of enterprises in determining the nature of OSH arrangements and outcomes are addressed (see, for example, Weil, 2011; James et al, 2015). There is a growing body of literature exploring the effects of these issues of context on the conditions under which work takes place, their implications for strategies of governance and regulation, and their effectiveness. Here again, this work

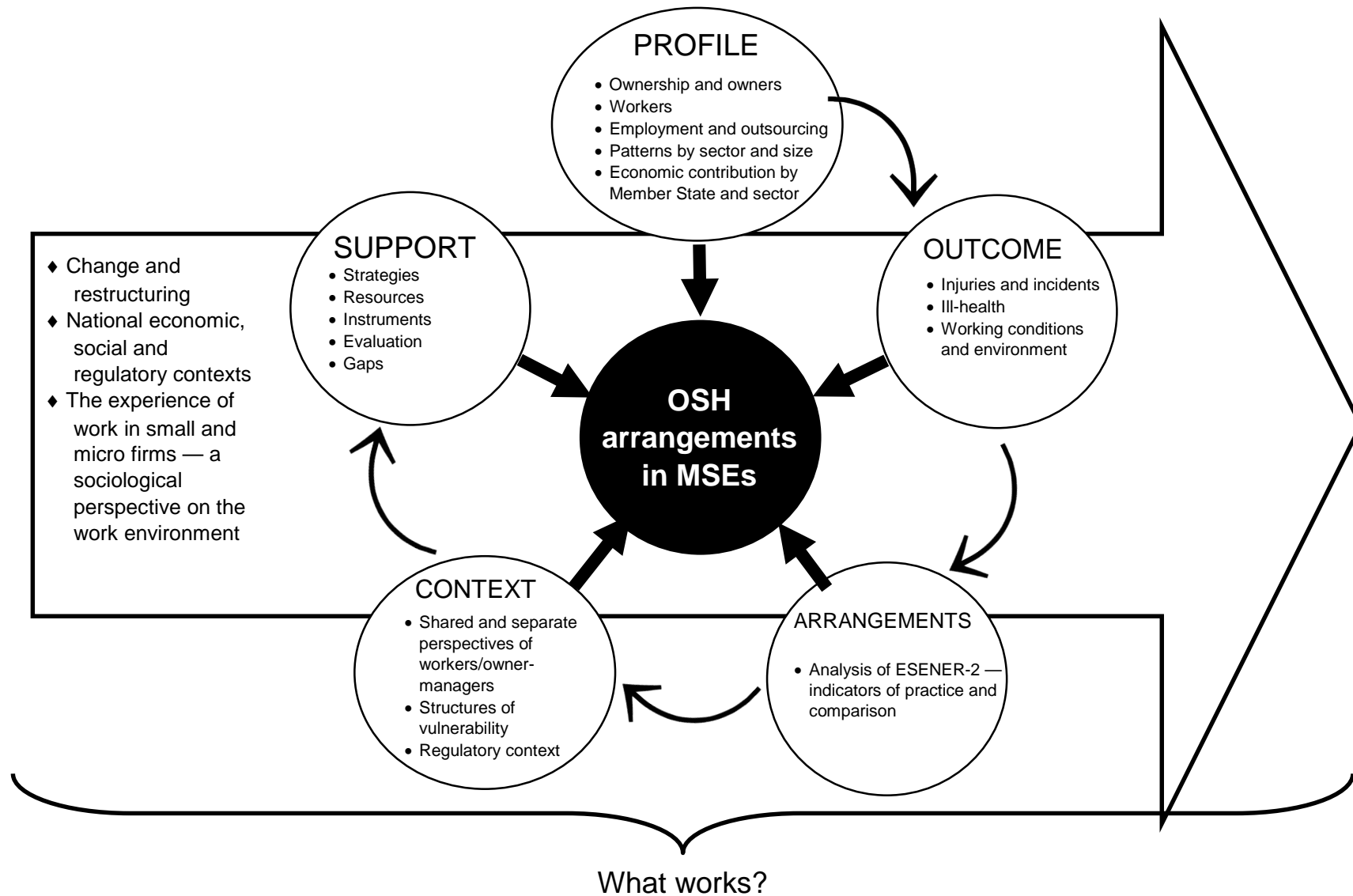
rarely focuses explicitly on OSH in MSEs (being more concerned with the overall OSH effects of subcontracting and supply chains), but nevertheless contains a number of important insights that are of relevance. We have extended our review to include elements of this literature, with the aim of exploring its implications in relation to the situation in micro and small firms and helping to inform the design of future research to explore these matters in MSEs further.

*National contexts* — The fourth distinguishing feature of our review concerns how we have taken account of the implications of national contexts in which MSEs are situated in different Member States of the EU. It is obvious that arrangements for OSH in micro and small firms do not exist in a vacuum, but are one element of the wider national ‘health and safety system’ in which they are situated in every country and which has some influence on workplace OSH practices and their outcomes. In part, this includes the regulatory contexts discussed above. But it is more than this, because regulation and governance are situated within, and related to, wider national political and economic structures, institutions and processes. As has been described elsewhere (see EU-OSHA, 2013), the interplay of economic, regulatory and labour relations styles and structures, as well as those providing for social welfare and insurance arrangements within EU Member States, help determine the nature of the health and safety systems in place in these countries governing and supporting OSH, which in turn influence the extent of the uptake of supranational measures on OSH management arrangements within establishments. There is good reason to suppose that this influence of national context would also be a significant reason for variations between Member States in the presence and quality of arrangements for OSH in micro and small firms. Unfortunately, we have found comparative analysis of the determinants of OSH arrangements and outcomes to be rare in the literature that addresses OSH issues directly and consequently here again we have been drawn to the wider comparative literature concerning the economy and the structure of work, regulation and public administration in EU Member States to meet our aim to provide contexts for understanding concerning ‘what works, for whom’ in determining OSH arrangements in MSEs.

## 1.2 An outline of the report

The way in which the report is structured to meet the aims of the research identified in the previous section is summed up in Figure 1.1, which also serves to illustrate the rationale of its narrative. It outlines how the content of the various areas reviewed are linked to one another, as well as by several cross-cutting themes concerning changes over time and the economic, business, social, regulatory, labour relations and other contexts of work in MSEs and their impacts on the OSH experience of workers. Figure 1.1 summarises the conceptual framework and research design used in the review to inform its critical synthesis concerning existing knowledge of the experience, nature and extent of problems related to OSH in MSEs; the reasons for these problems; their regulatory and socio-economic contexts; and the effectiveness of strategies and tools to address them. It has also proved useful in highlighting gaps in our understanding of all these matters and helping to identify areas for further empirical research that are outlined at the end of this report.

Figure 1.1: Analytical model informing the review of OSH in MSE



The research methods we have used in this review are essentially standard approaches to undertaking reviews of research literature. Elements that are specific to the aims of particular areas are detailed in the relevant chapter. Following on from this introductory chapter, the report is organised into six further chapters. As detailed below, the first five of these chapters focus on the areas we have reviewed in the sequence indicated in Figure 1.1, while the final chapter draws together their findings and conclusions concerning the state of existing knowledge and its implications for future research.

*Chapter 2* of the report, therefore, provides an outline of the findings from our review of the economic profile of MSEs in the EU. Its aim is to provide background and context, with an account of the development of economic policies on MSEs in the EU and some broad quantitative measures of the current profile of small and micro firms in the EU economy that enable us to focus attention on OSH-critical issues in relation to them. It is not intended to be a comprehensive description of the features of small and micro enterprises in the EU economy, but is a selective approach to help identify processes that provide the contextual factors that influence and help explain the OSH outcomes experienced in them.

Policy-relevant issues to which we also allude in Chapter 2 include a brief account of how small and micro firms have assumed increasing importance within the general shifting focus of EU and Member State economic policies and how the general orientation of these policies has helped to alter the economic contexts and business relations in which small and micro firms are situated, while at the same time being somewhat at odds with traditional approaches to OSH regulation.

In *Chapter 3*, we turn to an examination of health and safety outcomes. The chapter presents evidence of two main kinds: that which relates to injuries and fatalities in small and micro enterprises and that which describes work-related health outcomes and measures of the quality of work in these enterprises. European- and national-level sources of data are referred to in this chapter, but we have been primarily concerned with reviewing analytical research on these outcomes. We will argue that this analysis demonstrates both the negative effects of enterprise size on OSH outcomes and the significant contribution that occupational injuries, fatalities and work-related ill-health arising from work in MSEs make to the overall burden of (largely preventable) work-related harm experienced by workers in the EU.

*Chapter 4* reviews the research literature that helps to explain these findings. It first examines research that is focused on arrangements for OSH in MSEs and it draws on this work to demonstrate known weaknesses in these arrangements in MSEs and in the will and capacity of owner-managers to make them. It goes on to link these findings to some current comparative data on OSH management arrangements with a secondary analysis of the Second European Survey of Enterprises on New and Emerging Risks (ESENER-2) dataset. We have also used data from ESENER to draw attention to likely national differences in workplace practice on OSH management in MSEs.

*Chapter 5* concerns workers' experiences of OSH and the socio-legal contexts in which they occur in MSEs. In addition, in this chapter, we have interrogated the socio-legal and regulatory research literature to better understand what the key elements of regulation are and the roles of regulatory agents that influence OSH experience and performance. We discuss the role of new regulatory strategies on OSH, exploring the range of these approaches evident in the policies of regulatory agencies in some EU Member States, and we explore links between these approaches and those advocated in the research literature on OSH in MSEs that suggest the need to 'go upstream' to help achieve better OSH outcomes in these workplaces.

*Chapter 6* presents the results of an evaluation of strategies and resources for supporting health and safety arrangements in small and micro firms. This encompasses a broad area in the specific OSH literature and there is a substantial body of relevant research. Previous reviews of the extent and effects of supports for OSH in MSEs suggest that, while there is no shortage of approaches in many of the Member States of the EU and more widely, their distribution is irregular and, more importantly, their uptake and use is limited (see, for example, Walters, 2001, 2002, 2008; Champoux and Brun, 2003; Hasle and Limborg, 2006; Antonsson, 2007; Antonsson et al, 2009; Legg et al, 2010). The aim of the present review has been to construct a *critical review* and, as previously outlined, it has focused on identifying and evaluating the effectiveness of measures to improve OSH in MSEs. This is a critical area

for the study overall. Using the tools of ‘realist evaluation’, the chapter presents a critical evaluation of the current research evidence concerning the role of intervention, the resources to support it, its effectiveness and what makes it so. As such, focusing on ‘what is known’, ‘what works’, ‘where and for whom’ and ‘where the gaps are’, it aims to set a benchmark for future empirical research.

*Chapter 7* brings together the analysis of the previous chapters. It discusses the main findings of these analyses and summarises the state of relevant knowledge concerning the experience of arrangements for OSH in small and micro enterprises in the EU and what supports and limits their effectiveness. It does so taking account of national contexts and the possible determinants of differences observed in practices in different Member States. More significantly for the wider study of which this review is the first part, it identifies gaps in current knowledge concerning these matters and provides an important source of information guiding the development of the subsequent empirical research to be undertaken in the study as a whole.

### 1.3 Summary

In short, this report:

- presents a profile of the position of MSEs in the EU economy that is relevant to the analysis of the experience of OSH within these enterprises, and summarises the findings of analysis concerning OSH and related outcomes;
- reviews the research literature addressing the experience of workers in MSEs, the regulatory contexts in which strategies and preventive OSH arrangements in these enterprises are deployed — including drawing on current findings on OSH arrangements with some preliminary analysis of data from ESENER-2 — and discusses the effects of the economic position of MSEs on the arrangements for the delivery of OSH outcomes in this respect, as well as the effects of changes in the wider governance of OSH in EU Member States;
- reviews and evaluates the research literature concerning current strategies for achieving and supporting sustainable improvement in OSH in MSEs, including guides, processes and instruments, using techniques of realist evaluation to undertake this analysis and present an understanding of what works and why it works;
- draws conclusions that serve to summarise the state of current knowledge of these matters and identify significant gaps within this knowledge that might be addressed in more detailed studies of OSH experiences in MSEs and the resources available to support and improve this experience in selected EU Member States.

The report represents a stand-alone critical review of current knowledge on OSH and the approaches to improve it in MSEs in the EU. As the conclusions to this report make clear, it also represents the point of departure for more detailed analyses to be undertaken in subsequent parts of the wider project of which it is part.



## 2 A profile of small and micro enterprises in the economy of the EU

It is widely acknowledged that MSEs play a major role in the EU economy and feature significantly in national and European economic policy (Lopriore, 2009). In order to gain a perspective on the scale of the experience of OSH in these firms and the challenge for arrangements to regulate and manage the risks associated with work in them, it is useful to first present an outline of their economic profile. The complexity and scale of their presence in all Member States means that to be brief when doing so risks superficiality and generalisation. Bearing this in mind, what is presented here is the result of a selective approach to the substantial available quantitative information, in order to achieve better contextualisation of the OSH critical issues that are the main focus of this report. As such, this chapter aims to first outline the development of the economic policy perspective on the role of MSEs in the EU economy, before considering recent evidence of their economic profile in Europe, in order to identify their size and importance and to highlight issues of vulnerability for these firms and their workers in relation to OSH.

### 2.1 The policy background

Small and micro enterprises have played a significant role in society and the economy for hundreds of years, supplying important crafts and services and providing work for many. They have formed integral parts of social and economic communities, playing a vital role in the development, sustainability and everyday life of these communities. As the nature of the economy has altered, perceptions of their role and value have also changed. Before exploring their current economic profile in the EU, it is useful to outline something of the way in which MSEs are perceived in current policy-orientated economic literature, where they are frequently conceptualised as among the most important drivers of economic growth. Such ideas have longstanding roots in liberal or libertarian approaches to the economy, where the notion of the entrepreneur has been strongly associated with the founding of small companies. Together these entities are regarded as agents of change, disrupting established economic patterns by introducing product or other types of innovations, identifying entrepreneurial opportunities in so-called imperfect markets and demonstrating ability to act on opportunities presented by these situations (Salerno, 2008). Such ideas can be traced to centuries-old economic philosophies. During the 20th century, they were largely overtaken by the advent of large-scale mass production and Keynesian macro-economic regulation (Jessop, 1998). Across most member countries of the Organisation of Economic Co-operation and Development (OECD), large ‘Fordist’ companies came to represent the definition of efficiency in respect to resource use and advantages of economies of scale — a model replicated in many respects in large public sector organisations too. Fordism in turn was conditioned by Keynesian regulation, which again was underpinned by stability guaranteed by institutionalised tripartite negotiations between the social partners (Jessop, 1998). In this scenario, class-based resistance to capital, such as that represented by organised labour, was accommodated and unions were increasingly seen as key players in ensuring the conditions fostering economic growth and prosperity (Jessop, 1998).

However, by the last quarter of the 20th century, weaknesses in this model were becoming increasingly apparent in the face of changes occurring across a host of economic, political and regulatory fronts. In many cases, the traditional industrial base of advanced market economies gave way to the growth of services. In keeping with the growing dominance of the neo-liberal political economy, a new consensus emerged suggesting that the 20th century industrial model and the Fordist organising and regulation principles that went with it were increasingly challenged by global economic instability, increased competition and offshore outsourcing (Piore and Sabel, 1984; Lundvall et al, 2009). In such scenarios, in which limits to increasing productivity in larger companies were identified, small and micro firms and the entrepreneurs responsible for their development and economic policy pronouncements returned to centre stage, seen as major players in economic recovery policies. As described by Piore and Sabel (1984), such organisations and their owner-managers were increasingly regarded as carriers of an alternative production system to that of the large Fordist companies. Referring to ‘flexible specialisation’, these and other authors argued that such firms were typically located in clusters in which they could explore advantages of being co-located with other companies with complementary assets and



capabilities. This was seen as underpinning the emergence of a network economy where SMEs were capable of harvesting externally based scale advantages without becoming rigid organisations — a model also in keeping with the many of the other changes taking place in larger organisations post-Fordism including, for example, downsizing, outsourcing, shifts from tight hierarchically controlled structures to more loosely organised arrangements of business, just-in-time production, increased porosity<sup>1</sup> and more flexible labour contracting — all of which were serving to alter the way in which work was organised and structured (Sayer and Walker, 1992).

These transformations represent the foundations for a widespread belief that SMEs and entrepreneurial companies played a crucial role in contemporary society in the EU, which required support from economic and social policies at all levels. Audretsch et al (2009:5) concluded that ‘...there are compelling reasons to view the contribution of SMEs to the Lisbon goal as positive. The recent adoption of the Small Business Act for Europe (2008) is a forceful point of orientation to spur the contribution of SMEs to a dynamic and prosperous Europe’. Despite dating from 2008, this legislation continues to be the foundation for the current SME policy including the 2020 Entrepreneurship Action Plan, which focuses on entrepreneurial training, the regulative environment (focusing on transparency and reducing unnecessary regulatory burdens) and establishing role models and reaching out to specific groups.

In summary, therefore, in economic policy terms, while the Keynesian roots of Fordism arguably had constituted more of a demand-side approach to economics, the late 20th century neo-liberal conceptualisation represented a shift towards a pure supply-side approach, as well as underlining important differences in its organising principles. In keeping with the rationale of such an approach, wider policies of governance required that the public sector should be rolled back, and principles of deregulation implemented (thus achieving reduced transaction costs), or be transferred into support organisations for private companies, especially small and micro ones, and entrepreneurial companies (Harvey, 2007).

These changes raise several questions for the present review. First, there is a need to appraise the evidence of the extent to which micro and small firms do in fact play the role of drivers of growth and prosperity as anticipated, and how current economic strategies help to support this role. If this is indeed the case, then it begs further questions concerning the consequences of this for the health, safety and welfare of the workers involved and the implications for the support necessary to improve their experience. In the following section, we review some of the evidence.

## 2.2 An economic profile of micro and small firms in the EU-28

In constructing the economic profile of MSEs outlined in this section, we have focused on the period 2008–2013/14 and relied primarily on publicly available data. As such, we build on the account of Audretsch et al (2009), which, in the first of a regular series of reports subsequently commissioned by the European Commission, outlined the key features of the profile of these enterprises in the EU prior to 2009. The definition of SMEs used in these data is ‘enterprises with fewer than 250 employees’; SMEs are further divided into micro enterprises (with fewer than 10), small enterprises (10–49) and medium-sized enterprises (50–249). Our focus is on MSEs, but, as this size range is sometimes not separated from the larger SMEs grouping in routine data, it has sometimes been necessary to include this larger group. Similarly, it is important to note that sole traders/the self-employed are frequently excluded from or indistinguishable within data relating to micro enterprises, making them often effectively invisible in such data.

### 2.2.1 A profile in numbers

At first glance there appear to be compelling reasons to ascribe a central importance to MSEs as economic agents in the EU. Certainly, when ranked by number of enterprises, micro companies

<sup>1</sup> It is acknowledged in the literature on organisational change that one of the significant effects of restructuring has been to cause the relations of production within firms to be more exposed to the influences of customers, suppliers, clients and business relations acting from outside the organisation (see, for example, Marchington et al, 2005).



constituted more than nine out of ten companies (92.4%) in the non-financial business sector of the EU-28 in 2013, while small enterprises accounted for 6.4%, medium-sized enterprises 1.0% and large enterprises only 0.2% (Table 2.1).

**Table 2.1: SMEs and large enterprises: number of enterprises, value added and employment in the non-financial business sector of the EU-28 in 2013**

	Micro	Small	MSEs	Medium	Large	Total
<b>Number of enterprises</b>						
<b>Number</b>	19,969,338	1,378,374	21,347,712	223,648	43,517	21,614,908
<b>%</b>	92.4	6.4	98.8	1.0	0.2	100
<b>Employment</b>						
<b>Number</b>	38,629,012	27,353,660	65,982,672	22,860,792	44,053,576	132,897,040
<b>%</b>	29.1	20.6	49.7	17.2	33.1	100
<b>Value added at factor costs</b>						
<b>Million euros</b>	1,362,336	1,147,885	2,5102,221	1,156,558	2,643,795	6,310,557
<b>%</b>	21.6	18.2	39.8	18.3	41.9	100

**Source:** European Commission, Annual Report on European SMEs 2013/2014

Growth in numbers of companies has fluctuated in line with economic trends over the last decade, with sources indicating variations between sectors. For example, the construction industry suffered a considerable downturn (Table 2.2, Figure 2.1) with the total population of firms within construction declining by 10% between 2008 and 2012, a decline generally attributed to the recent economic recession in which the construction industry was among the sectors most affected.

**Table 2.2: Performance of SMEs by sector in the EU-28 in 2013**

	Number of SMEs % change, 2012–2013	Value added of SMEs % change, 2012–2013	SME employment % change, 2012–2013
<b>Manufacturing</b>	–1%	1%	–1%
<b>Construction</b>	–5%	–2%	–4%
<b>Trade</b>	–1%	1%	–1%
<b>Accommodation/food S.</b>	–1%	1%	–1%
<b>Business S.</b>	1%	2%	1%
<b>Others</b>	0.4%	2%	1%

**Source:** European Commission, Annual Report on European SMEs 2013/2014

**Figure 2.1: The performance of EU-28 SMEs in various economic sectors, percentage change from 2008 to 2013**

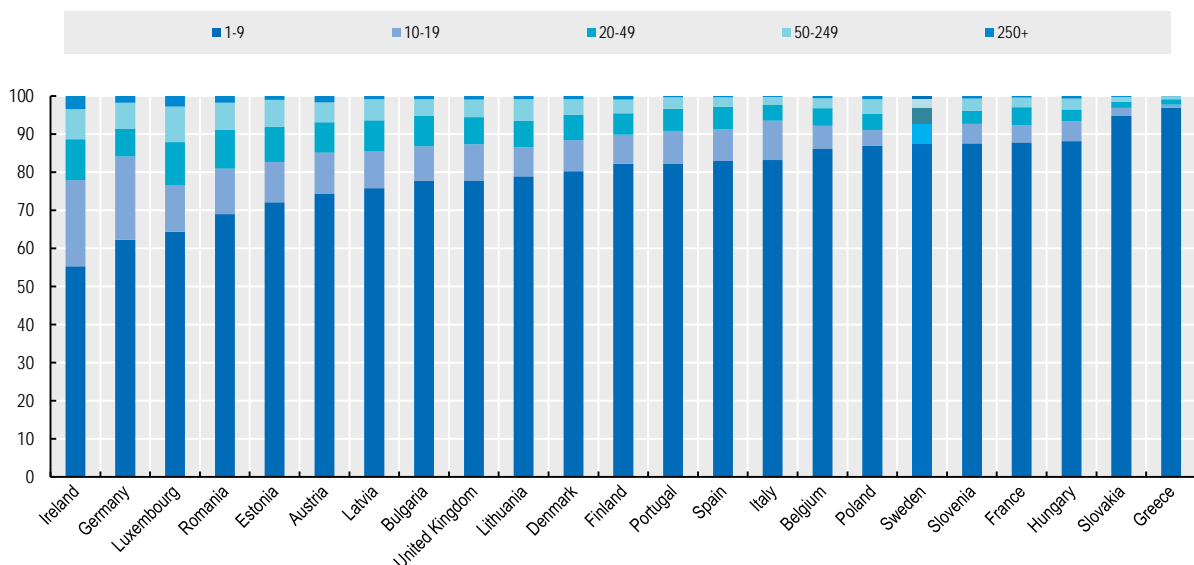


**Note:** Slovakia is not included in this EU aggregate owing to a break in the series. The name ‘Business S.’ is used as an abbreviation of the NACE category M, ‘Professional/scientific/technical activities’, and ‘Trade’ refers to G ‘Wholesale/retail trade/repair of motor vehicles/motorcycles’. Categories in ‘Others’ refer to sections of NACE Rev.2 classifications B, D, E, H, J, L and N.

**Source:** European Commission, Annual Report on European SMEs 2013/2014

Other sectors, such as manufacturing and trade, experienced a smaller decline with reduction in the total number of companies by 5% and 2% respectively. At the same time, some sectors experienced growth with, for example, business services growing by 10% in the same period. These changes are, however, small and do not result in significant change in the number of SMEs during the recent period — compared with that identified by Audretsch et al (2009) for the earlier period. This suggests that SMEs have indeed become a more significant presence in the economy — at least when measured in terms of their numbers — over the last decade, but the growth in this presence has perhaps been less apparent in the most recent phase.

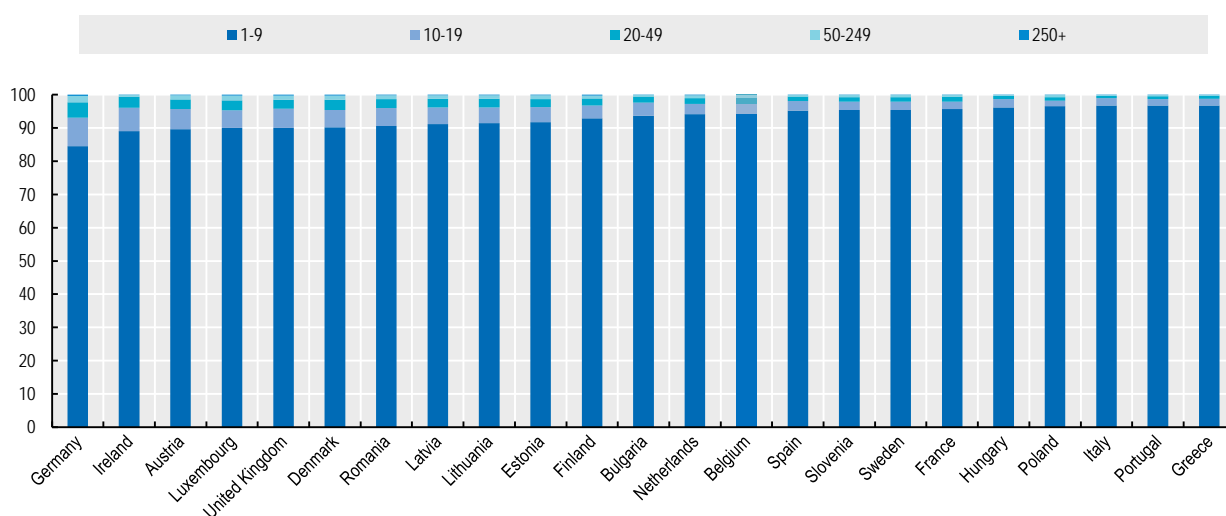
**Figure 2.2: Enterprises by size, manufacturing, OECD data for selected EU-28 countries**



**Source:** Entrepreneurship at a Glance, OECD (2014)

According to OECD data for selected EU-28 countries, the comparative importance of SMEs within manufacturing, for example, varies by country. When measured by the portion of the total population of enterprises represented by SMEs in manufacturing, in some countries they only account for around 55% while in others they represent as much as 98% (Figure 2.2). There does not seem to be an obvious structural feature (such as size or location of country) that determines the importance of the SMEs within manufacturing. They can be seen to be especially numerous in manufacturing in countries such as Sweden, France, Hungary and Slovakia, where they constitute about 90% or more of the total population of companies. By comparison, their proportions are generally greater in the service industries in countries within the EU-28, where SMEs — again in terms of their numerical presence — on average account for just under 90% of the total population of companies (see Figure 2.3), and variation between countries is less than in manufacturing, although there are a few exceptions — such as Ireland, where the lesser importance of SMEs is most likely attributable to the size of the ICT software and service industry.

**Figure 2.3: Enterprises by size, services, OECD data for selected EU-28 countries**



**Source:** Entrepreneurship at a Glance, OECD (2014)

## 2.2.2 Measures of performance

There are other ways of measuring the role and significance of SMEs in the economy and when, for instance, measures of ‘performance’ are used, a different and more nuanced picture emerges. For example, if the value added by SMEs is the measure, it is clear that they account for a relatively small amount. Micro companies — making up about nine out of ten companies — account for only slightly more than 20% of value added and SMEs account for slightly less than 20% each (as shown separately in Table 2.1, 2013 numbers).<sup>2</sup> Large companies are responsible for slightly above 40% of total value added (despite only representing 0.2% of the total firm population within the EU-28). Although the overall amount is comparatively small, the value added for SMEs has grown relatively more than the growth in the number of firms (as shown in Figure 2.1) in the period from 2005 to 2012. This suggests an increase in value added per SME in the same period. The value added has grown by approximately 15% (from 100 in 2005 to 116 in 2012). Moreover, it is important to remember that during the same period there has also been growth in the informal economy, in which there is a predominance of small operations. These are likely to have escaped detection in the data.

Figure 2.1 shows that the value added displays a strong sector specificity (measured in the changes from 2008 to 2013). The value added dropped for construction and manufacturing by almost 22% but grew by 10% in accommodation and food and 7% in business services. In total, the numbers suggest a

<sup>2</sup> The numbers are relatively stable over time. In 2002, micro companies accounted for 21% of value added, small companies for 18% and medium-sized companies for 19%. Large companies accounted for 43% (Audretsch et al, 2009).

certain dualism in the areas where SMEs operate, in which (business) services tend to increase their value added, while traditional manufacturing and construction reduce in importance. As this is a long-term trend, it is not likely to be entirely attributable to recent economic crises. In the 'old' EU countries, it might reflect growing global outsourcing to or competition from (especially) developing countries and perhaps some Eastern European countries. As such, it may to some extent reflect an increased vulnerability of SMEs within sectors such as manufacturing. Within services there is also a dualism between so-called mainstream markets and niche markets (the latter being associated with low profitability owing to low entry barriers).

The value added by SMEs also varies across countries in the EU (see Table 2.3, 2011 numbers), without displaying an obvious pattern in connection to determining variables (e.g. size, gross domestic product (GDP)). Value added by micro companies is, for example, just below 30% in Denmark and Spain. However, Denmark represents a small country (approximately 5 million inhabitants) with a high GDP, while Spain represents a large country (approximately 47 million people) with a significantly lower GDP.<sup>3</sup> The variation in former Eastern Bloc countries is also significant. In the Czech Republic, for example, micro companies account for around 22% of value added, they account for 18% in Romania, but in Slovenia they account for 35% of value added. Similar variation is found for other company sizes (see Table 2.3).

**Table 2.3: Value added by enterprise size, OECD data for selected EU-28 countries (%)**

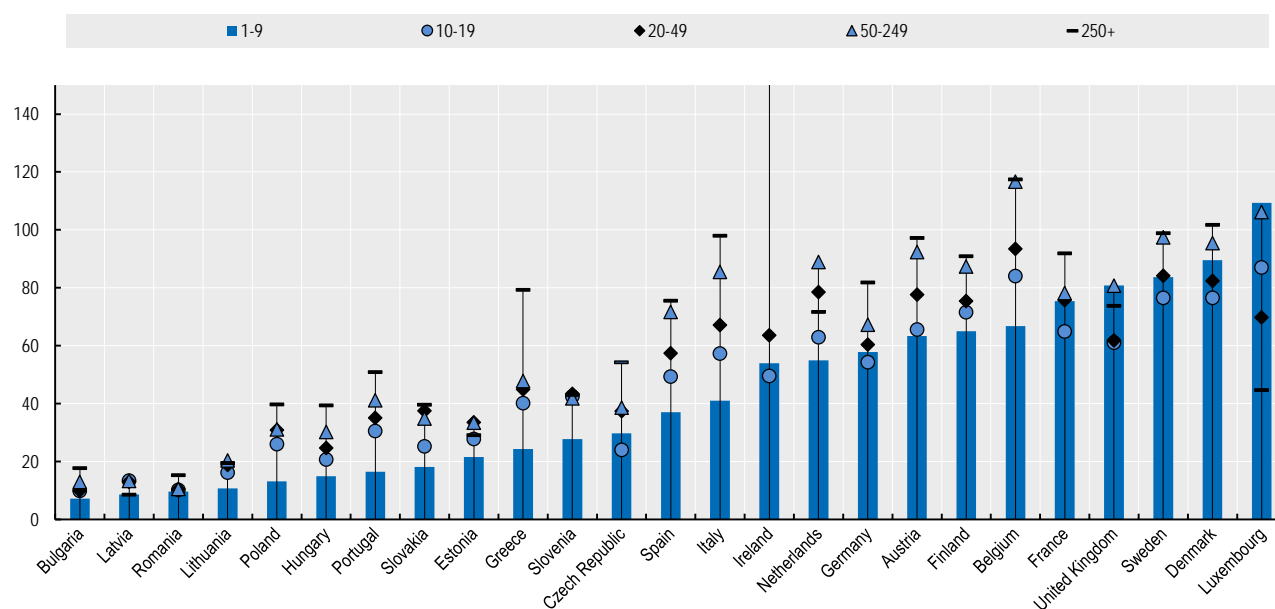
	1–9	10–19	20–49	50–249	250+
<b>Austria</b>	24.62	10.20	13.59	19.50	32.09
<b>Belgium</b>	24.89	8.54	12.76	20.19	33.63
<b>Bulgaria</b>	20.56	9.45	12.40	24.13	33.46
<b>Czech Republic</b>	21.73	4.98	9.32	20.28	43.68
<b>Denmark</b>	28.40	11.04	12.88	18.65	29.02
<b>Estonia</b>	16.37	15.96	19.55	26.47	21.65
<b>Finland</b>	21.32	7.74	12.14	20.52	38.29
<b>France</b>	29.78	5.81	10.62	16.07	37.72
<b>Germany</b>	16.52	9.40	11.07	19.29	43.72
<b>Greece</b>	41.39	8.64	12.73	19.37	17.87
<b>Hungary</b>	24.86	8.21	9.27	17.70	39.96
<b>Ireland</b>	19.35	7.40	10.08	16.53	46.65
<b>Italy</b>	32.54	11.07	9.88	17.52	28.99
<b>Latvia</b>	20.68	14.14	17.66	29.26	18.26
<b>Lithuania</b>	22.35	14.53	18.93	22.71	21.48
<b>Luxembourg</b>	39.37	16.98	22.34	12.92	8.38
<b>Netherlands</b>	23.98	6.78	13.95	25.18	30.11
<b>Poland</b>	20.99	4.79	10.48	22.87	40.88
<b>Portugal</b>	25.14	11.89	15.79	20.77	26.40
<b>Romania</b>	18.10	8.09	11.31	19.26	43.23
<b>Slovakia</b>	28.30	8.08	12.58	21.15	29.89
<b>Slovenia</b>	35.25	14.57	6.17	24.09	19.91
<b>Spain</b>	28.31	9.18	12.18	17.72	32.61
<b>Sweden</b>	25.08	7.51	12.89	20.21	34.30
<b>United Kingdom</b>	21.69	7.51	9.72	17.90	43.17

**Source:** Entrepreneurship at a Glance, OECD 2014

<sup>3</sup> [http://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_GDP\\_\(PPP\)\\_per\\_capita](http://en.wikipedia.org/wiki/List_of_countries_by_GDP_(PPP)_per_capita) (accessed 31.01.2015).

A further comparative measure is the labour productivity of SMEs, which displays large differences across the different EU-28 countries (see Figure 2.4 and Table 2.4; 2011 numbers). These differences indicate a pattern of low labour productivity in Eastern European countries (e.g. Bulgaria, Poland), higher productivity in the Southern European countries (e.g. Spain, Italy), higher again in the Central European countries (e.g. Germany and Austria) and highest in the Scandinavian countries (e.g. Sweden and Denmark). The differences here are substantial. For example, labour productivity amounts to only USD 10,000 per employed person in SMEs in Romania, and more than ten times that (around USD 110,000 per employed person) in SMEs in Norway. The two represent respectively a low productivity and a high productivity country. Most Eastern European and Southern European countries are thus suffering from low productivity, making them vulnerable to global competition from developing countries (although, of course, productivity captures only a part of the total explanation of competitiveness). Again, it should be borne in mind that these data do not include those of the informal economy, although it is likely that this sector contributes to lower measures of productivity, as it is based more on cheap labour than on efficient use of capital (and it also has hidden costs to the community including those resulting from poor OSH outcomes).

**Figure 2.4: Labour productivity levels (thousands of USD per employed person) by enterprise size, total economy, OECD data for 2011 for selected EU-28 countries**



**Source:** Entrepreneurship at a Glance, OECD (2014)

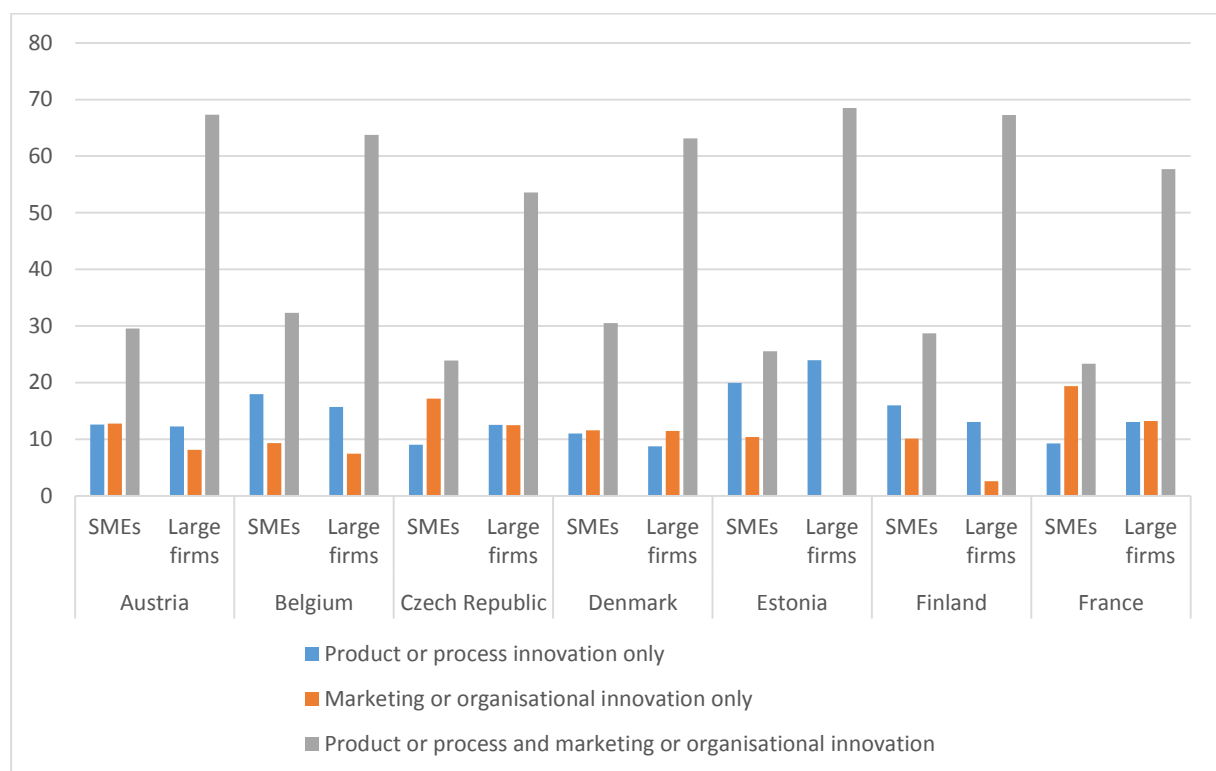
**Table 2.4: Labour productivity levels (thousands of USD per employed person) by enterprise size and sector, OECD data for 2011 for selected EU-28 countries**

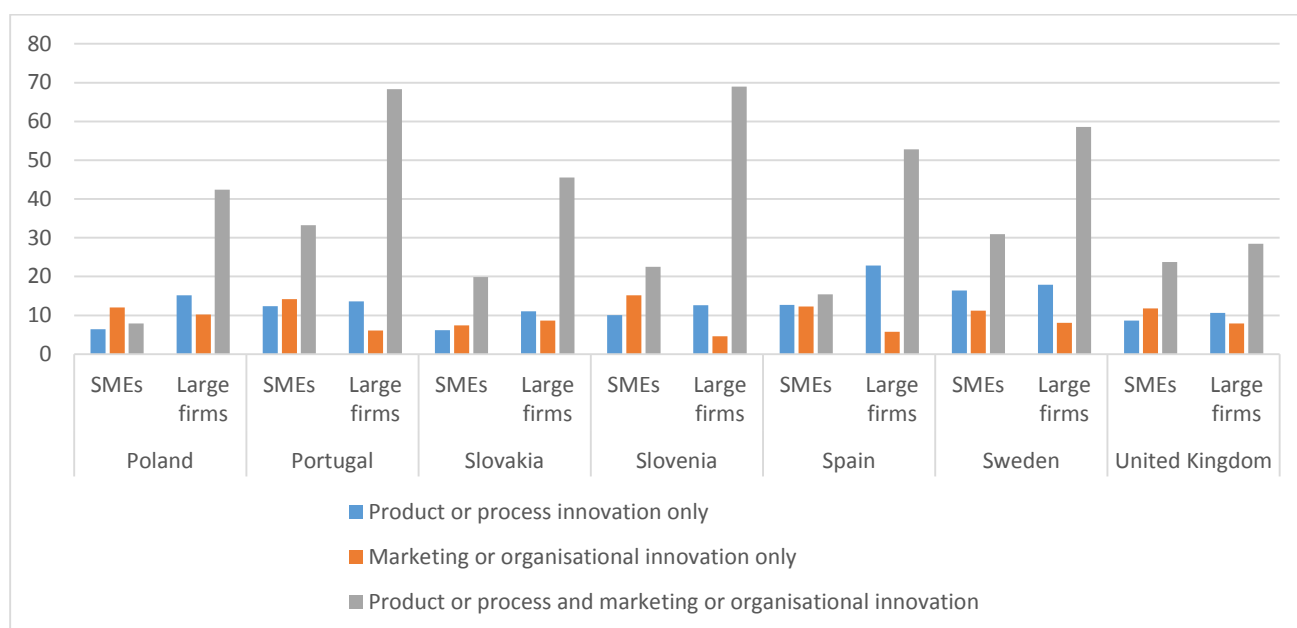
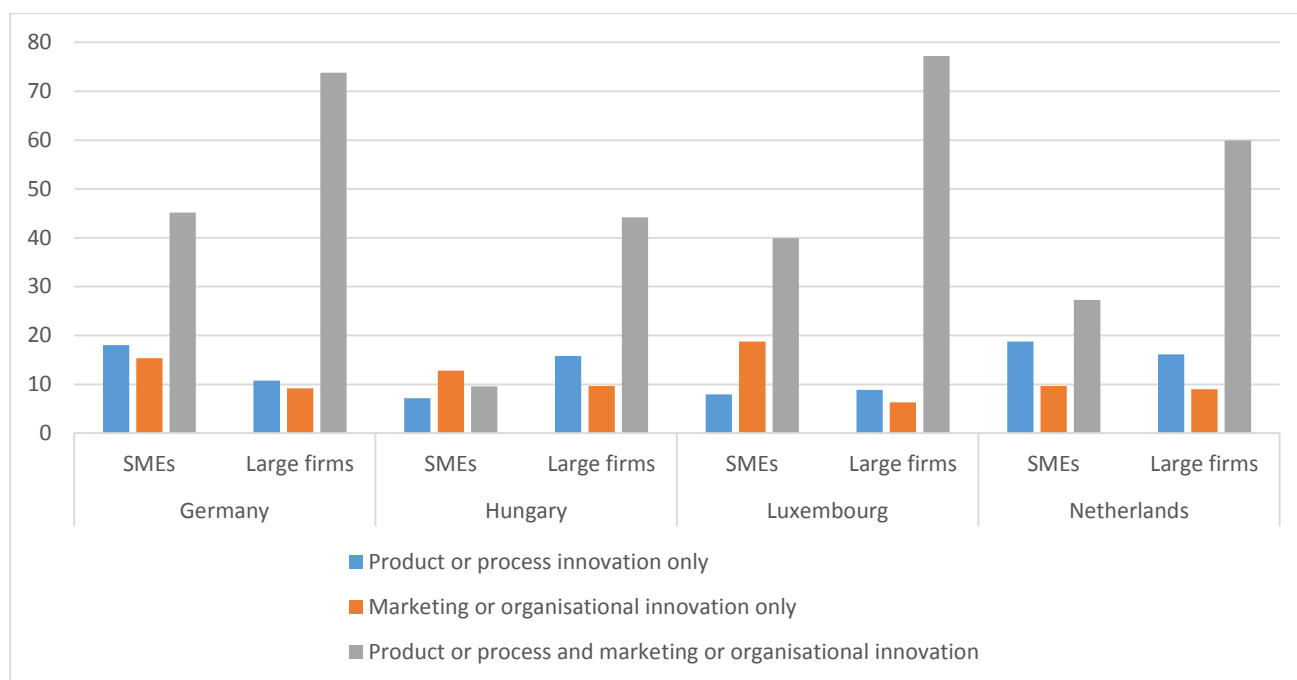
Country	Manufacturing					Services					Construction				
	1-9	10-19	20-49	50-249	250+	1-9	10-19	20-49	50-249	250+	1-9	10-19	20-49	50-249	250+
<b>Austria</b>	60.9	60.8	72.0	95.3	123.9	94.1	96.8	116.4	125.0	85.9	82.7	90.4	98.8	114.1	128.1
<b>Belgium</b>	85.8	64.1	74.5	94.2	126.2	71.0	97.3	109.2	136.9	116.1	83.7	103.7	106.0	120.7	141.1
<b>Bulgaria</b>	64.4	59.3	57.5	84.6	152.7	66.7	101.9	113.9	141.4	144.1	81.9	79.2	61.8	137.1	123.6
<b>Czech Republic</b>	60.4	49.2	69.9	82.0	138.9	81.3	80.1	105.0	121.4	123.0	–	156.1	–	275.7	401.6
<b>Denmark</b>	109.5	71.0	79.7	91.1	118.5	104.3	86.8	92.4	106.0	101.2	91.3	99.1	100.2	112.1	131.4
<b>Estonia</b>	69.9	83.0	112.6	127.4	79.5	100.8	93.2	113.9	102.0	95.0	86.0	116.5	130.2	167.0	156.6
<b>Finland</b>	91.7	75.6	81.6	90.4	114.0	85.4	98.7	104.7	116.8	101.1	92.0	97.5	98.4	119.0	111.1
<b>France</b>	70.9	76.5	80.6	85.5	127.7	97.6	93.7	100.3	101.8	102.7	108.5	57.7	92.3	86.7	130.4
<b>Germany</b>	52.4	66.7	73.2	84.0	124.0	102.0	86.2	96.4	103.3	103.0	74.5	94.1	113.0	122.6	161.4

	Manufacturing				Services				Construction						
<b>Greece</b>	66.8	93.5	91.6	118.6	207.9	68.2	108.7	141.5	186.6	163.6	86.7	223.8	51.5	70.8	257.8
<b>Hungary</b>	45.3	58.1	65.7	86.3	142.8	70.7	100.4	123.3	141.7	139.9	80.1	106.8	128.8	173.5	242.4
<b>Ireland</b>	29.5	20.8	26.1	62.1	151.2	73.7	77.8	97.5	218.1	147.8	122.1	55.4	88.4	87.3	82.8
<b>Italy</b>	50.2	72.6	90.8	120.2	155.7	76.1	105.7	114.5	132.9	147.9	85.2	114.1	131.8	177.2	232.8
<b>Latvia</b>	94.7	42.3	108.8	168.7	29.4	70.1	140.9	128.9	116.4	90.8	101.4	66.7	96.5	112.4	116.1
<b>Lithuania</b>	45.8	51.8	80.2	108.9	144.8	72.7	115.7	131.8	137.1	95.4	38.2	97.1	120.5	156.0	164.5
<b>Luxembourg</b>	114.8	81.5	78.0	109.2		125.5	108.1	83.3	150.5	35.0	118.0	97.9	90.3	92.7	109.0
<b>Netherlands</b>	51.8	55.6	62.8	86.8	187.2	87.1	98.4	128.0	133.5	84.1	83.8	139.0	105.9	124.9	98.8
<b>Poland</b>	42.1	66.2	72.4	88.1	141.3	53.8	127.7	157.5	157.8	149.6	73.2	99.7	129.5	115.8	162.4
<b>Portugal</b>	39.5	56.7	74.2	92.9	249.5	61.8	138.9	149.8	169.5	136.2	60.3	87.2	111.9	154.4	189.4
<b>Romania</b>	77.8	63.1	49.6	89.1	125.3	83.5	104.1	116.9	89.9	117.5	107.1	71.3	90.6	69.4	159.4
<b>Slovakia</b>	53.1	68.1	88.0	101.9	135.8	74.0	97.0	179.2	128.7	111.0	80.6	150.0	102.7	186.4	188.2
<b>Slovenia</b>	71.0	101.3	104.7	98.6	129.3	82.8	134.3	120.9	130.5	97.5	82.6	116.5	170.5	122.9	
<b>Spain</b>	69.1	68.9	87.3	105.5	141.5	71.8	101.3	109.1	132.0	133.3	75.2	86.2	103.0	140.5	180.0
<b>Sweden</b>	71.4	76.5	70.9	84.9	129.0	105.3	88.3	101.6	112.8	90.2	87.3	98.8	101.3	113.9	127.6
<b>United Kingdom</b>	73.7	62.5	64.8	88.4	141.6	119.7	88.5	87.3	112.0	93.5	104.0	80.8	88.0	103.6	111.4

Source: Entrepreneurship at a Glance, OECD (2014)

Figure 2.5: Innovation by size and innovation type, OECD data for selected EU-28 countries





**Source:** Entrepreneurship at a Glance, OECD (2014)

Innovation and performance are further comparative measures. Here, there is a need to be cautious, as the nature of data collection techniques, different conceptualisations and operationalisation of innovation measures, etc., have been shown to greatly influence results (Massa and Testa, 2008). Relatedly, there are no convincing results on the importance of innovation for survival and/or performance and virtually none on vulnerability. The official data reported in Figure 2.5 nevertheless give an indication. These data suggest that, in relation to innovation, SMEs generally perform significantly less convincingly than large companies in relation to all types of innovation (i.e. in relation to product or process innovation and marketing or organisational innovation separately, or both of these in combination). In all countries SMEs engage less in combined innovations than larger companies; this is the case even in those countries renowned for the innovative performance of their SMEs (e.g. Denmark). The picture is somewhat less clear when it comes to focusing only on one of the two major

types of innovation. However, as also shown in single-industry studies (see, for example, Verhees and Meulenbergh, 2004), the data indicate that a combined effect (i.e. an interaction effect) between the two above-mentioned types of innovation lends itself to improved performance, and hence it is likely that it positively affects vulnerability. However, these results are not conclusive, as recent streams of research suggest that specificities of the SMEs (e.g. age) and institutional context influence the relevance of embracing a ‘combined’ innovation strategy (Rosenbusch et al, 2011).

### **2.2.3 Employment in micro and small firms**

Finally, it needs to be borne in mind that, despite their large numbers, SMEs only employ a limited share of the total labour force in the EU-28. While there may be a greater degree of under-reporting among smaller firms than larger ones, statistics show that, on average, micro companies are responsible for the employment of 29% of the labour force, small companies for 20% and medium-sized companies for 17% (as shown in Table 2.1, 2013 numbers). These numbers have not changed significantly since 2002. Employment in large companies accounts for 42% of the total employment of the EU labour force. The number of people employed in SMEs during the recent economic crises remained stable (and actually grew a few percentages points, see Figure 2.1). There are, however, also significant sectoral differences echoing the differences in value added. Construction and manufacturing have reduced significantly, while accommodation and food and business services increased their share of employment (see Table 2.2, Figure 2.2).

The overall conclusion to be drawn from these general statistics is that, while SMEs clearly constitute an important part of the EU economy overall, their importance is more attributable to their number than to their value added, labour productivity or share of total employment. There are also tendencies towards large differences between SMEs in different sectors, for example certain services (e.g. business services) experience a high degree of growth in value added while those in more traditional low-end services and traditional manufacturing experience negative or low growth in value added.

### **2.2.4 Investment in development — the experience of training**

Differences between MSEs in different sectors reflect features of the ways in which they utilise both tangible and intangible resources, where higher value added represents utilisation of resources that are valuable, rare, difficult to imitate and difficult to substitute (Grant, 1996). There are numerous factors determining the characteristics of the resources possessed by MSEs (and entrepreneurs). Crucial among them is their human capital and their ability to sustain it, which typically requires such things as investment in training for their employees (Eilström and Kock, 2008). One way of explaining the limited value added, low productivity and limited innovative performance (in selected countries) noted among micro and small firms in the previous sub-section is through its association with their limited investment in human capital, such as through training. A proxy indicating training is evidence of participation in continuous vocational education and training (CVET). CVET is in turn associated with competence maintenance and development (increasingly important in a context where the skill and knowledge depreciation rates have decreased over time), where global cost competition forces the EU-28 countries to move up the value added ladder and where increased market and technology uncertainty, in combination with shorter product life-cycles and shorter time-to-market, force enterprises to engage in CVET if they wish for long-term survival and/or to improve their market power (Lundvall et al, 2009).

In this respect, it is significant that quantitative data indicate that in the EU-28 micro and small firms participate in these CVET activities much less than larger companies, across all types of CVET training (CEDEFOP, 2014; 2010 numbers).

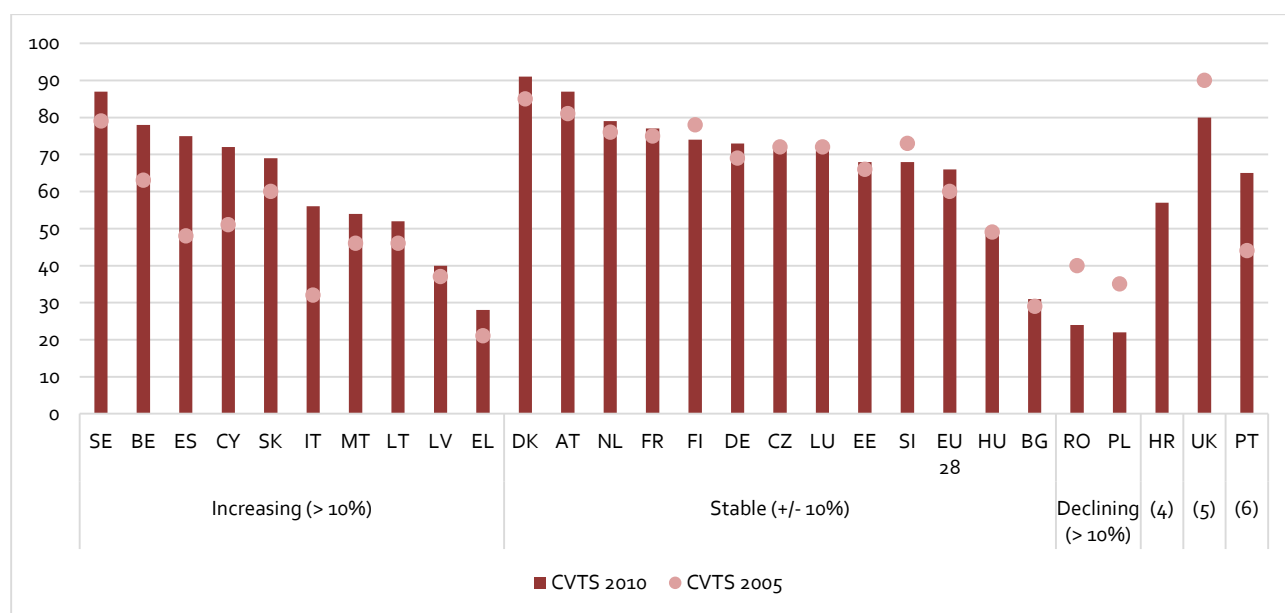
Small companies hardly participate in training activities based on conferences and workshops or in company practices such as job rotation (CEDEFOP, 2014). The former types of activities are associated with seeking external knowledge (such as through participation in conferences), while job rotation is associated with improving skills and knowledge through on-the-job training within companies. Low participation in such activities may constitute further barriers to a ‘high road’ strategy. In addition, there



is an educational bias in participation rates where the most well-educated participate in CVET training and increasingly so.<sup>4</sup>

While on average more companies are participating in CVET activities, this camouflages differences between different countries. Although these data are not broken down by company size, former Eastern Bloc countries experience reduced participation in CVET. Other countries such as Denmark and Sweden stand out with high participatory rates (see also Figure 2.6). Taking other comparative indices into account, it seems likely that such differences would be maintained throughout all size ranges and are quite likely to be more marked among smaller enterprises (CEDEFOP, 2014).

**Figure 2.6: Training incidence — enterprises providing any type of training (courses or other forms) in most EU-28 countries (%)**



**Note:** Continuing Vocational Training Survey (CVTS4) (2010) compared with CVTS3 (2005). (4) No participation in CVTS3; (5) data for CVTS3 not comparable; (6) data for CVTS4 not fully comparable.

**Source:** CEDEFOP (2014)

All of these indicators tend to suggest that a sizable proportion of smaller firms are more susceptible to experiencing the negative effects of changes in the global competitive landscape and this may be more evident in some countries than in others. Enterprises in such situations are, in other words, more often forced down the 'low road' of development with increased pressure on wages, working conditions, etc., as opposed to embarking on the 'high road' characterised by a focus on investment and innovation (Giuliani, 2016). Further evidence of this effect is seen in the documentation by CEDEFOP (2014) of a linear correlation between the percentage of companies participating in training and aggregate innovative performance.

A small digression is in order here to explain our use of the terms 'low road' and 'high road' in relation to the contexts in which arrangements for health and safety occur in MSEs, as these are descriptive terms we will have reason to apply quite frequently in this and subsequent chapters. It is necessary to first acknowledge that there is a broad literature in which these terms are used with various understandings and dimensions (see, for instance, Pyke and Sengenberger, 1992; Osterman, 1994; Knauss, 1998; Bacon and Blyton, 2000; among many others). In this literature they have been applied not only to matters embracing the economic position, survival strategy and overall corporate approach

<sup>4</sup> Reliance of International Standard Classification of Education (ISCE) gives a crude but simplified introduction.

of enterprises, but also in terms of work organisation, investment in skills, job quality, wages, social dialogue, type of innovation, and so on. They may include matters such as market position (where ‘low market entry’, low added value and ‘low end’ of the value chain<sup>5</sup> indicate likely economic vulnerability), but they can also be used to characterise coherent bundles of corporate strategies related to different models of work organisation adopted by firms as well as industrial relations strategies, human resources management (HRM) practices and ultimately job quality and type of workers hired. This literature rarely considers the consequences of such strategies for the experience of health and safety in the companies studied. One significant exception in this respect is the study by Bacon and Blyton (2000), who report that the ‘high road’ approaches to teamwork they studied in the steel industry were associated with workers’ perceptions of improved OSH. In the way in which we will use these terms in the present report, we are seeking to link bundles of such organisational and business strategies adopted by MSEs with contextual influences indicated in the literature concerning the experience of work in small and micro firms. Our interest in doing so is to explore possible associations between the ‘structures of vulnerability’ (Nichols, 1997)<sup>6</sup> identified in this literature, and ‘low road’ survival strategies, as both are potentially associated with increased risks to the health and safety of workers in such enterprises.

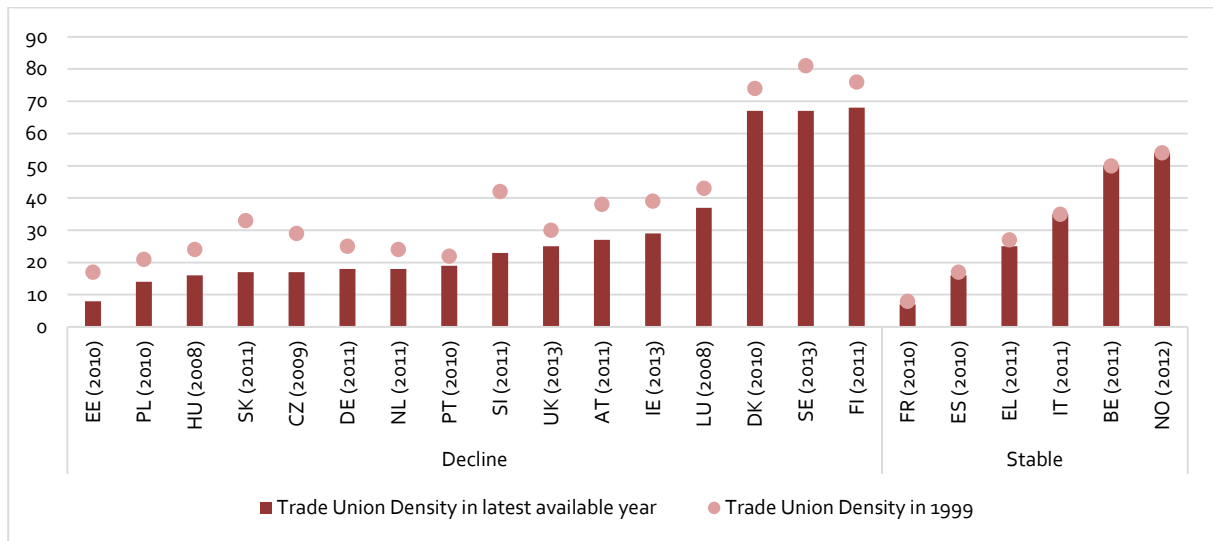
### **2.2.5 Unionisation and micro and small firms**

A high union density can and frequently does co-exist with high GDP and other measures of support for economic success (Figure 2.7). As such, their role in Keynesian style economic regulation and association with tripartite institutional support for skills development, such as provided through CVET, arguably contribute to further institutional support for the avoidance of ‘low road’ economic survival strategies among enterprises. Dialogue between the social partners and efficiently implemented collective bargaining agreements also confer benefits pertaining to ensuring stability in between bargaining periods as trade unions accept responsibility for reducing strikes, etc. (Andersen and Simonsen, 2005). If one accepts this premise, then the decline in trade union presence in most EU economies serves to remove a further support for skills development in small and micro firms and increase their susceptibility to ‘low road’ survival strategies. This is especially the case in those Member States such as the older Eastern European countries where there is trade union density of less than 20% and where social dialogue is mostly organised at company level, outwith the limited sector or national industrial relation system. It is well known that union density is positively related to firm size and, while there is no routine quantitative survey data covering small and micro firms in this respect, it is clear that union presence is much reduced as firm size decreases and, of course, is entirely absent from the informal sector. An additional proxy for the inclination towards embarking on the ‘low road’ strategy is the extent to which employees are covered by collective bargaining agreements; again we find a picture of limited collective bargaining in older Eastern European countries and, in contrast, those in Scandinavia among the highest ranking (see Figure 2.8).

<sup>5</sup> ‘Value chain’ is a term that is often used interchangeably with ‘supply chain’ but, strictly defined, it refers to the activities companies adopt within supply chains to create value exceeding the costs of the provision of goods.

<sup>6</sup> Nichols’ ‘structures of vulnerability’ are defined in more detail in our later discussions — see Chapter 5.

Figure 2.7: Trade union density levels and trends in some European countries (%)



**Note:** No figures available for other Member States.

**Source:** OECD, Visser et al (2014), in Eurofound (2015a)

Figure 2.8: Membership of employers' organisations participating in collective bargaining, EU-28 (%)



**Note:** Companies in the private sector in the EU-28 with 10 employees or more.

**Source:** European Companies Survey data (2013), in Eurofound (2015a)

## 2.3 Measures of dependency

In trying to understand what influences the nature and extent of arrangements that MSEs make for the health, safety and welfare of their workers, it is necessary to remember that this is not only a question of compliance with regulatory norms, or the technical or managerial capacity to understand and translate such requirements into good practice. While such capacities are of course important, it is equally necessary to bear in mind that the degree of decision latitude MSEs may command in relation to their operations is strongly influenced by the position of their business in relation to others that affect it. One particular feature of economic restructuring that has taken place at the same time as the emergence of focus on MSEs is the increased prominence afforded to the role of outsourcing and the consequent increased significance of value chains in business relations. This development is now arguably among the defining features of the current economy in the EU. As is well documented, it has led to major changes across the whole range of structural and procedural forms in which work is undertaken and it would be surprising indeed if the nature and consequences of work in small and micro firms were not also affected by these changes.

The generally increased prominence of outsourcing and the role of value chains and the processes that go on within them mean nowadays the different activities that make up an organisation's primary process are commonly distributed over multiple organisations. This growing complexity is rooted in a progressing division of labour as a fundamental process in the evolution of organisations. It drives managerial solutions to accommodate increased organisational complexity resulting from trends towards diversification of products and services and to achieve more economically efficient production (World Trade Organization, 2005). In these scenarios, established production processes and worker collectivities unravel, organisations and internal labour markets shrink and places of work are populated with workers who work for other employers.

Among the key drivers for these processes are differences between countries (or regions) and sectors concerning the regulation of wages, working conditions and collective bargaining. Differences between workers increase with organisational fragmentation and outsourcing speeds up the tendency of deregulation and decentralisation of concentration because the clients or subcontractors' employees reside under different collective labour agreements (Flecker, 2010; Kirov and Ramioul, 2014). In these scenarios, differences in working conditions and labour relations are both a cause and a consequence of the increasing complexity and heterogeneity of the value chains and fragmenting organisations that determine their economic and business operations (Flecker, 2010). Small and micro firms are, therefore, increasingly embedded in networks of business and economic relations, which may have a variety of powerful influences on the ways in which they conduct their operations — and consequently the way in which they manage arrangements for the health and safety of their workers. While quantitative data on the position and role of MSEs in value chains are scarce, qualitative studies help to describe scenarios that the more limited quantitative data suggest are most likely to capture the main experience.

Value chains present MSEs with both opportunities and challenges. For some, they may facilitate better integration in high value markets. For others, horizontal connections between MSEs belonging to the same supply chain stage, and producing or trading similar products may help them to combine and benefit through cost sharing, production flexibility, and so on. MSEs are also connected vertically to other firms in different stages of the value chain. Depending on their position in the value chain, this may generate benefits related to higher control and help to increase entry barriers to potential competitors (Schmitz, 2004). According to an OECD (2008) study, the successful positioning of small firms in value chains is further influenced by their capacity to use ICT and improved transport technologies to ease access to markets outside their national/regional boundaries. Fragmentation of production, which as we have already pointed out is one reason for the increased prominence of value chains, may also create new entrepreneurial possibilities for some MSEs. Their flexibility and ability to move quickly may help them to adapt more easily than some larger organisations to the constantly changing products and services market. In some sectors, such as the manufacture and servicing of precision and scientific instruments and the software industry, they may often become successful, specialised and niche market companies serving different global value chains (OECD, 2008).

However, for many (and the data in previous sub-sections suggest probably most) MSEs, the increased role of global value chains presents serious challenges. Data from the Third European Company Survey

(ECS) conducted in 2013, for example, generally supports the conclusion that small firms are more dependent on others than are larger ones for the operation of their primary functions (Eurofound, 2015b). Compared with medium-sized and large companies, small companies are more dependent on others both for design and development and for production. They are dominantly engaged in the sale and marketing of goods and services (Eurofound, 2015b:39–41) Their limited amount of investment capital and the necessity to exist and survive in increasingly demanding markets mean that MSEs are found mostly at the lower end of global value chains (Caspari, 2003). Because of their small size and limited capital, they are often required to sell products and services through intermediaries. These buying networks can be very complex and involve many intermediaries (local buyer, importing wholesaler, etc.) that may be in strong economic and business positions in relation to the MSEs, dictating price and delivery requirements that impact strongly on the organisational priorities and management of MSEs (Kaplinsky and Morris, 2001:98). MSEs often lack the time and resources required to identify their competitive strengths within these chains and often further lack adequate managerial and financial resources to upgrade their business, to protect their developed technology or to innovate, all of which contribute to maintaining a position at the lower (and most dependent) end of such chains or networks (James et al, 2007).<sup>7</sup> This is also a position from which they often have problems understanding the structure and dynamics of the value chain beyond the surrounding environment, and are therefore limited in the extent to which they can take advantage of it (Kowalkowski et al, 2013). Finally, the compliance of SMEs with strict product quality standards imposed by more powerful buyers (often more than one), may be difficult and costly (OECD, 2008). In addition, with their limited human and capital resources, they may find themselves further challenged by the need for compliance with a wide range of other standards, including those concerning environmental, labour and OSH matters, which serves to limit their participation in higher profile activities and contributes to a preference to eschew opportunities to move up to a stronger position in the value chain (Caspari, 2003).

The distribution of power in value chains helps to maintain this situation. In terms of the relations within them, observers have identified different types of value chains. For example, Gereffi et al (2005) present a framework of five types of value chain governance — hierarchical, captive, relational, modular and market relations — which exhibit different levels of coordination and power asymmetry. Other authors point to different forms of contractual collaboration between firms (for example, Marchington and Vincent, 2004; Marchington et al, 2005; Flecker, 2010) which contribute to fragmenting work, while still others, such as Weil (2009, 2014), have identified various patterns of interdependencies and power relations between firms as a consequence of outsourcing. The significance of all such analyses is that they point to power being mainly concentrated towards the higher ends of these chains and increasing vulnerabilities experienced lower down the chains, as the predominant trends within them act to shift risks and costs downwards. Research shows this to be commonly associated with a process of employment degradation as large purchaser organisations take advantage of their superior market power to secure financially advantageous supply arrangements (Rubery et al, 2003; Wright and Lund, 2003; James and Lloyd, 2008; Walters and James, 2011; Cunningham et al, 2013). Given the evidence that largely places MSEs at the lower levels of these chains, this creates the conditions in which arrangements for OSH are more likely to be disproportionately overlooked in these enterprises.

International research evidence on the effects of outsourcing has produced remarkably consistent findings in this regard. For example, a 2008 review of 25 such studies found poorer OSH outcomes in all but two of them (Quinlan and Bohle, 2008). Similarly, another review, focusing on the consequences for health and safety of the increased importance of supply chains in modern business practices, found that a large majority of the over 100 studies reviewed identified poorer OSH management and outcomes as a result of outsourcing (Quinlan et al, 2001).

Available sector-based evidence points in the same broad direction. Numerous studies have, for example, identified the widespread use of subcontracting and its poor management as important contributors to the occurrence of accidents and associated injuries in the construction industry. In

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<sup>7</sup> It is important to be clear that, in using the term 'supply chain', we are referring to what is likely to be a complex cluster or network. While there are different forms of relations within these chains or networks, the word 'chain' suggests too much linearity than is in fact the case. Nor by using the term do we necessarily imply a limitation to one particular part of the economy, as in practice there are no organisations that are *not* linked to other organisations.

particular, financial and time pressures impinging on subcontractors, the lower levels of supervision and training provided to subcontractor personnel, as well as poor levels of communication with them, and the problems of coordinating the activities of subcontractors in multi-employer worksites, have all been highlighted as important factors adversely impacting on health and safety management on construction sites (Kochan et al, 1994; Rebitzer, 1995; Mayhew and Quinlan, 1997; Johnstone et al, 2001; Donaghy, 2009).

Studies undertaken in the food production and processing sector similarly demonstrate how the dynamics of supply chains can create working environments within supplier organisations that increase risks to worker health and safety (Wright and Lund, 2003). They have, for example, revealed how supply chain relationships between supermarkets and their suppliers can lead to increased, unstable patterns of work and working time and work intensification (James and Lloyd, 2008). Reviewing the research literature on the health and safety effects of the processes that have led to the increased prominence of relations within value chains among the determinants of health and safety practices and outcomes, Walters and James and their colleagues demonstrated that, while under certain circumstances, these relations have the potential to act as determinants of good practice among enterprises such as small and micro firms that are in economically dependent positions, in the main they contribute to poor OSH practices and outcomes in these enterprises (Walters and James, 2009, 2011; EU-OSHA, 2012; James et al, 2014; Sampson et al, 2014).

A considerable body of evidence also more specifically highlights that the types of work changes that commonly result from supply chain pressures are linked to a variety of adverse health and health-related outcomes, including increased incidence of cardiovascular disease, burnout and depression (Benach et al, 2002; Ferrie et al, 2002). Changes where such links have been identified include greater job insecurity, poorer pay, lowered access to training among precarious workers and less control over working time (see, for example, Bohle et al, 2004), while the reasons identified for them have included competitive pressures on subcontractors (resulting in corner-cutting, work intensification and excessive hours) and disorganisation (leading to, for example, more attenuated control systems in the workplace, under-resourced operators and undermined regulatory control) (Mayhew et al, 1996). While much of this literature does not focus explicitly on enterprise size, it does focus on conditions at the lower positions in value chains and, as we have pointed out, this is where, in many sectors of economic activity including those studied in the research cited, the majority of small and micro enterprises are situated. It is reasonable to conclude, therefore, that even when not explicitly mentioned, in the majority of these studies, the workers that ultimately experience these poor OSH outcomes are likely to be working in small and micro enterprises.

## 2.4 Conclusions

The outline of the position of micro and small firms in the economy of the EU presented in this chapter has concentrated on elements that are linked to the focus of the review on the state of OSH within these enterprises. It traces the current foregrounding of the role of these enterprises in EU economic policies through the shift away from Keynesian economic regulation to current neo-liberal orientated supply-side approaches to economic policies widely adopted within the EU and elsewhere. Consistent with this orientation, support offered to these enterprises by governance is characterised by liberalisation of restrictions seen as a hindrance to their growth, diversity and entrepreneurial capacities.<sup>8</sup>

To sum up, MSEs are a heterogeneous group of firms spread across a host of different sectors. They are a significant element of the EU economy measured in terms of their numbers, but measures of other variables (e.g. employment, value added and profitability) create a more complex picture in which their importance is more attributable to their number than to their economic performance. However, it also needs to be remembered that, while economic performance measures may be comparatively low, MSEs' role in supporting the better performance of other larger organisations that outsource work to them cannot be ignored. Indeed, in many cases, it could be argued that their weakness and vulnerability is the price paid for better performance in the more dominant, larger, organisations that they service and

<sup>8</sup> Including regulatory restrictions — as we will explore further in later chapters.



which have achieved their business success through outsourcing costs and risks (including those on OSH) to smaller enterprises. Substantial differences in the patterns of their presence are also seen between some Member States and between sectors (both within and between Member States). Included among micro and small firms are some that are active in high value-adding activities (e.g. business services) and engaging in increased participation in training activities, etc., which help them develop sustainable rents and possible dynamic capabilities. Such companies have also weathered the recent economic crisis, which suggests that they are relatively resilient to economic volatility and fluctuations. However, these firms constitute only a part of the total MSE population and the rest increasingly face pressures leading them towards embarking on 'low road' survival strategies.

While their heterogeneity makes generalisations difficult, many of the measures of economic performance, investment and business activity referred to in previous sections help to explain why, while there are exceptions, this large proportion of MSEs are embarked upon so-called 'low road' strategies towards their survival (Pyke and Sengenberger, 1992). Many such enterprises tend to operate in markets with low entry barriers (and thus low profit/income), in low profit niche markets and as subcontractors to larger companies (where their bargaining power and decision latitude is much reduced). In relation to the focus of this review, it is important to note that the consequence of this scenario is that much of this large proportion of MSEs is situated in areas of the economy in which OSH risks are relatively high and where, at the same time, as a consequence of their 'low road' survival strategies and dependent roles in relation to larger companies, workers are surrounded by structures of vulnerability in which a disproportionate number of owner-managers may lack both will and capacity to deal effectively with arrangements to manage OSH risks.

We have also pointed out that among the contextual determinants that lead to the 'low road' position occupied by this large proportion of MSEs are economic determinants fostered by current trends in business and economic policies and practices in which, in particular, outsourcing and global value chains assume substantial influence. Put simply, our review of the available literature leads to the conclusion that these features contribute to the vulnerability of workers in MSEs to poor OSH experiences because they help to ensure that many of these enterprises are situated in weak and dependent positions in value chains which foster reduced decision latitude in relation to their OSH arrangements.

In short, empirical evidence of features of both economic structure and process within the EU is sufficient to suggest that current trends are likely to contribute to scenarios in which large numbers of workers in MSEs are situated in positions of potential vulnerability to risks to their health, safety and welfare. Their position in the economy means that the majority of the MSEs in which these workers are employed lack the capacity to unilaterally improve either their business position or the arrangements they are able to make to protect the health and safety of their workers. These patterns and their associated vulnerabilities persist at the same time as policy discourse in many Member States and at the EU level concerns itself with reducing or suspending OSH regulatory requirements for the same companies and where resources for regulatory inspectorates are also reducing in many Member States. Under such circumstances, there is good reason to pay increased attention to achieving a better understanding of both the experience of OSH in MSEs and the micro-level reasons for it, as well as the most effective means of supporting good practice in such scenarios.





### 3 Health and safety outcomes, the work environment and the quality of jobs in micro and small firms in Europe — some indicators of possible relationships

In this chapter, we review analysis and commentary on safety and health outcomes in micro and small firms in the EU. There are several indicators that are of interest. They include occupational injuries and fatalities, occupational disease and other forms of ill-health associated with work-related causes. We also explore evidence of exposures to hazards in the work environment of MSEs and measures of job quality that might reflect or be associated with the work environment.

While there is a great deal of information on these matters routinely reported in all EU jurisdictions, and aggregate data on all the above indicators are regularly published at national and European levels, what is of primary concern to us here is what analysis of such information can tell us about the comparative experience of health, safety and related outcomes in micro and small firms. In this chapter, we have, therefore, distinguished between routinely collected and published information on OSH and related measures and the analytical studies of this material that examine the effects of establishment size. As we explore in some detail, interpretation of the measures that are of interest is subject to a range of caveats concerning their representativeness and reliability and the extent to which they account for possible confounding variables. Largely for this reason, we do not rely on published statistics when distinguishing the effect of enterprise/establishment size, but instead draw conclusions from a review of what research undertaking secondary analysis of these sources concludes concerning size effects. Previous research makes this possible in relation to some indicators — such as fatalities and serious injuries — but, as the following sections make clear, this possibility is less feasible in relation to other health and safety outcomes and the exposures that lead to them. It is also the case that both the official statistics and the secondary analysis in research studies are frequently inconsistent and incomplete in the ways in which they address the effects of workplace size, further reducing the opportunity for rigorous comparison between different sources of official data and different studies.

Bearing such caveats in mind, there are nevertheless some conclusions to be reached from a review of research findings on enterprise/establishment size effects on OSH outcomes, which are helpful in the interpretation of sources of national- and European-level aggregate data. We have, therefore, structured the following account in order to foreground research analysis and to present an interpretation of other data that are informed by the outcomes of our review of such analytical studies.

#### 3.1 Occupational fatalities and injuries

As the analysis of size effects is clearest in the case of occupational fatalities and injuries, we start with this example. First, we consider the data on occurrence in relation to size, and we follow this with some reflections on patterns of occurrence and the need for further information.

##### 3.1.1 Occurrence

Conventional approaches to analysing the occurrence of occupational fatalities and injuries use several different measures according to severity. These are usually occupational fatalities, serious injuries and lost-time injuries. Obviously the first of these requires little further definition (although what constitutes ‘occupational or work-related’ varies under different jurisdictions, and the time span between occurrence and death may also vary in different definitions), but injuries are subject to considerably greater variation of definition, both between jurisdictions and within them over time.

Drawing on past sources of recorded occupational fatalities, data analysis has suggested that the nature of the risk of a fatal injury at work will depend more on the type of activity undertaken than on the size of the workplace in which it occurs. That is, differences in risks between sectors of economic activity in which different exposures occur have been regarded as likely to be more influential in determining fatalities than differences of workplace size. Construction, agriculture, mining and quarrying generally

feature among the sectors in which the occurrence of both fatalities and serious injuries is most prevalent. According to EU-OSHA (2000), based on an analysis of data from the 1990s, the highest rates of fatal accidents occurred in construction, with comparatively high rates also in agriculture, forestry and fishing, and mining and quarrying. More recent data confirm this pattern, with construction continuing to show the highest risk of fatalities to workers throughout the EU. Both construction and agriculture are sectors of economic activity in which there are large proportions of small and micro firms. In some EU countries, such as the United Kingdom, even mining has seen an increase in the involvement of smaller firms, as formerly nationalised industries have been privatised and larger mining companies have increasingly subcontracted and outsourced work in the mines they operate to smaller contractors (Quinlan, 2014). To some extent, therefore, we would expect the concentration of such firms in these sectors to influence global counts of fatalities in smaller firms. However, the greater incidence of fatalities observed in smaller enterprises is not explained solely in terms of their greater presence among the more dangerous sectors of economic activity.

As the authors of a comparison of injury performance between small and large firms in the United Kingdom noted (HSE, 2001):

*The number of people employed at a workplace has an impact on the profile of risk of workplace injury in terms of the nature of injury, severity and kinds of accident. This difference in the profile of risk will reflect the different cultures, processes and occupations at risk, as well as any genuine variation in the approach to safety management in small versus larger workplaces. The job related factors and personal characteristics which help to explain the profile of relative risk for the majority of reportable injuries cannot explain this relatively high risk of fatal and amputation injury in small workplaces.*

It has been further suggested that other factors to do with the OSH arrangements in place in smaller firms, and more generally to do with the pressures under which they operate (such as those discussed in the previous chapter), may also be important (see Walters, 2001, 2002).

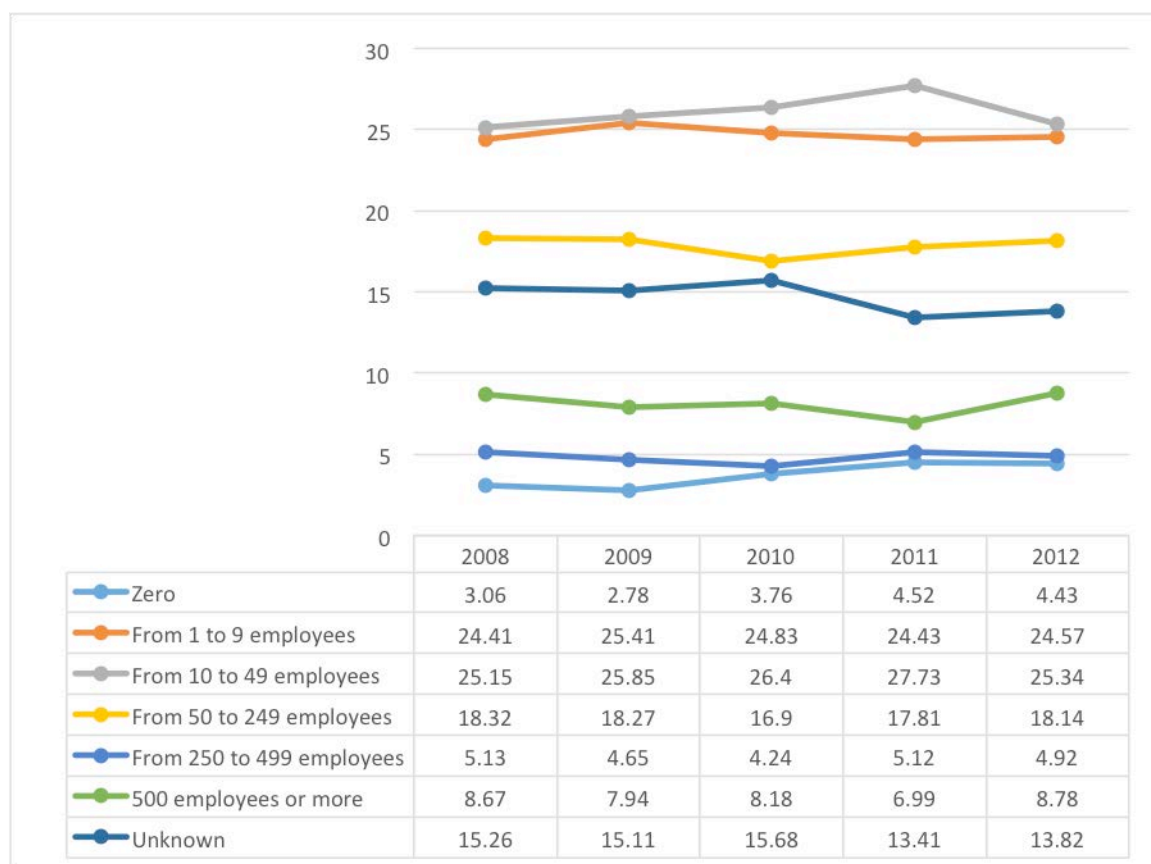
However, undertaking reliable analysis that is able to separate size effects on OSH outcomes from those of other confounding variables such as sector, as well as from the compositional effects of age, sex, experience, establishment type, work and worker characteristics,<sup>9</sup> and so on, is challenging (Sørensen et al, 2007; Dong et al, 2011; Holte et al, 2015). Where enterprise size has been measured, and such compositional effects also addressed, in analysis of data on both fatalities and serious injuries, there have been significant indicators of the presence of a size effect (see, for example, Nichols, 1989a; Stevens, 1993; Nichols et al, 1995; and, for a summary of scientific literature, Sørensen et al, 2007). Patterns of incidence of both fatalities and serious injuries indicate that the incidence of such events in small enterprises is significantly greater than in larger ones even after compositional effects are accounted for. In their review of relevant international scientific literature, Sørensen et al (2007) found that various sources indicate higher fatality rates (Mendeloff and Kagey, 1990; Suruda and Wallace, 1996; Stevens, 1999; Fabiano et al, 2004) in small enterprises than in larger companies, while other sources also showed higher numbers of lost days due to injuries (Oleinick et al, 1995; McVittie et al, 1997; Fabiano et al, 2004). While the patterns for fatalities and serious injuries are fairly consistent, it needs to be acknowledged that analysis concerning lost-time injuries has produced more varied findings. Some sources of the latter show more differentiated patterns, some indicating the highest risks in medium-sized enterprises (Leigh, 1989; Mendeloff and Kagey, 1990; Oleinick et al, 1995), while others show a higher risk level of major injuries but a lower risk level of minor injuries in small enterprises than in large enterprises (Stevens, 1999; Kines and Mikkelsen, 2003). Such differences are commonly argued to most likely be the result of reporting effects brought about by the influence of various social determinants on both the nature of reporting systems and the role of individual discretion in reporting. As these effects are so widespread and may themselves be differentially influenced by enterprise size, we will have cause to return to a discussion of them later in this chapter.

<sup>9</sup> A number of studies indicate that there is variation in injury risk by the specific characteristics of the work performed and the type of injury (Glazner et al, 1998; Lowery et al, 2000, cited by Holte et al, 2015; Larsson and Field, 2002; López Arquillos et al, 2012; Center for Construction Research and Training, 2013; Lipscomb et al, 2013, 2014).

The ‘take home’ message that emerges from past research, however, is that, while there may be variation in the findings of individual studies and in the appearance of published information resulting from routine systems for reporting and recording fatality and injury data, the consensus that emerges from more robust analysis of this material is that there is a significant size effect on occupational fatalities and serious injuries that is not entirely explained by other factors.

The most recently available European aggregate data are also broadly supportive of this conclusion, although they have not been analysed in such depth or in the same ways as are found in the research literature (European Commission, 2009). For example, as Figure 3.1 below indicates, over the period 2008–2012 the largest share of fatal accidents occurred among workers in enterprises with up to 49 employees.

**Figure 3.1: Fatal accidents in the EU-27 within enterprise size classes in the period 2008–2012\* (%)**



\*NACE Rev.2, classifications A and C–N.

**Note:** Zero refers to the self-employed without employees.

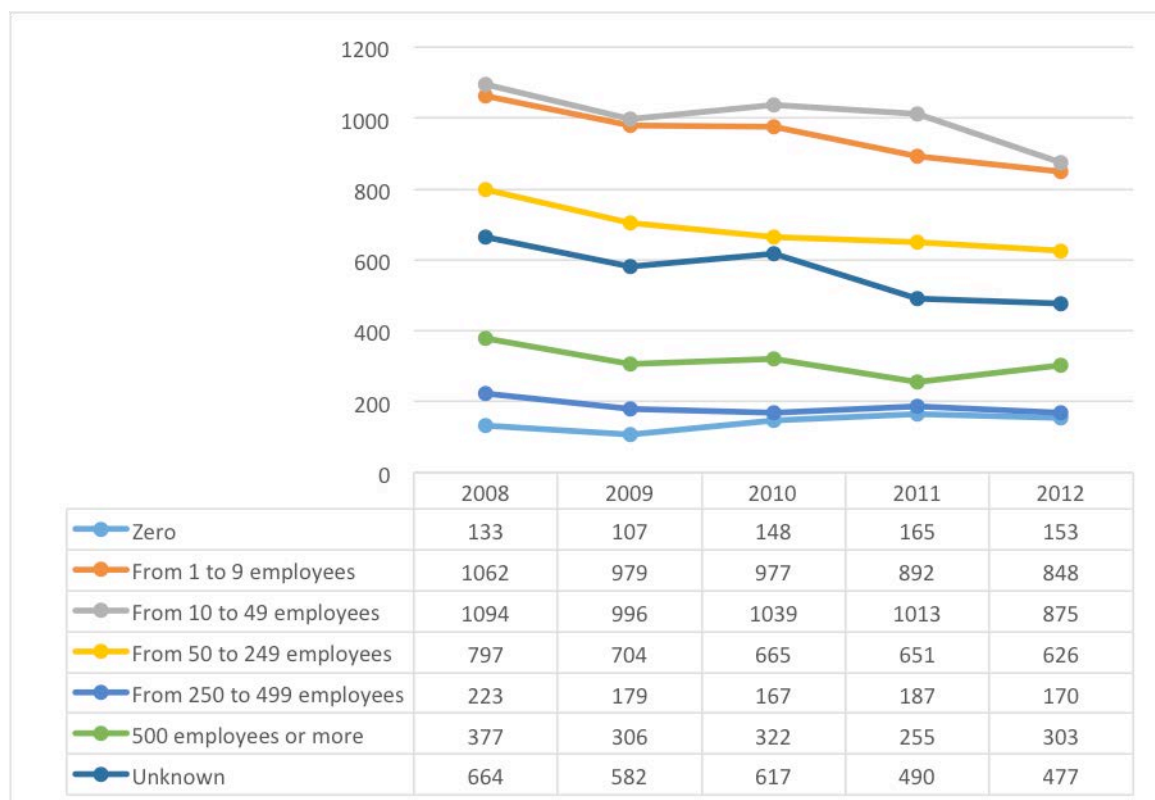
**Source:** ESAW (European Statistics on Accidents at Work), available online<sup>10</sup>

As Figure 3.2 shows, trends in fatalities in recent years also suggest that the effects of economic recession and recovery were felt across all size bands, with lower numbers of injuries occurring at times of economic downturn — again such patterns are borne out by older, more in-depth analysis of the effects of the business cycle on trends in injuries and fatalities (see, for example, Nichols, 1989b, 1991).

<sup>10</sup> Data extracted from the Eurostat online database

([http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw\\_mi04&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw_mi04&lang=en)) on 14.10.2015.

Figure 3.2: Number of fatal accidents in the EU-27 by enterprise size in the period 2008–2012\*



\*NACE Rev.2, classifications A and C–N.

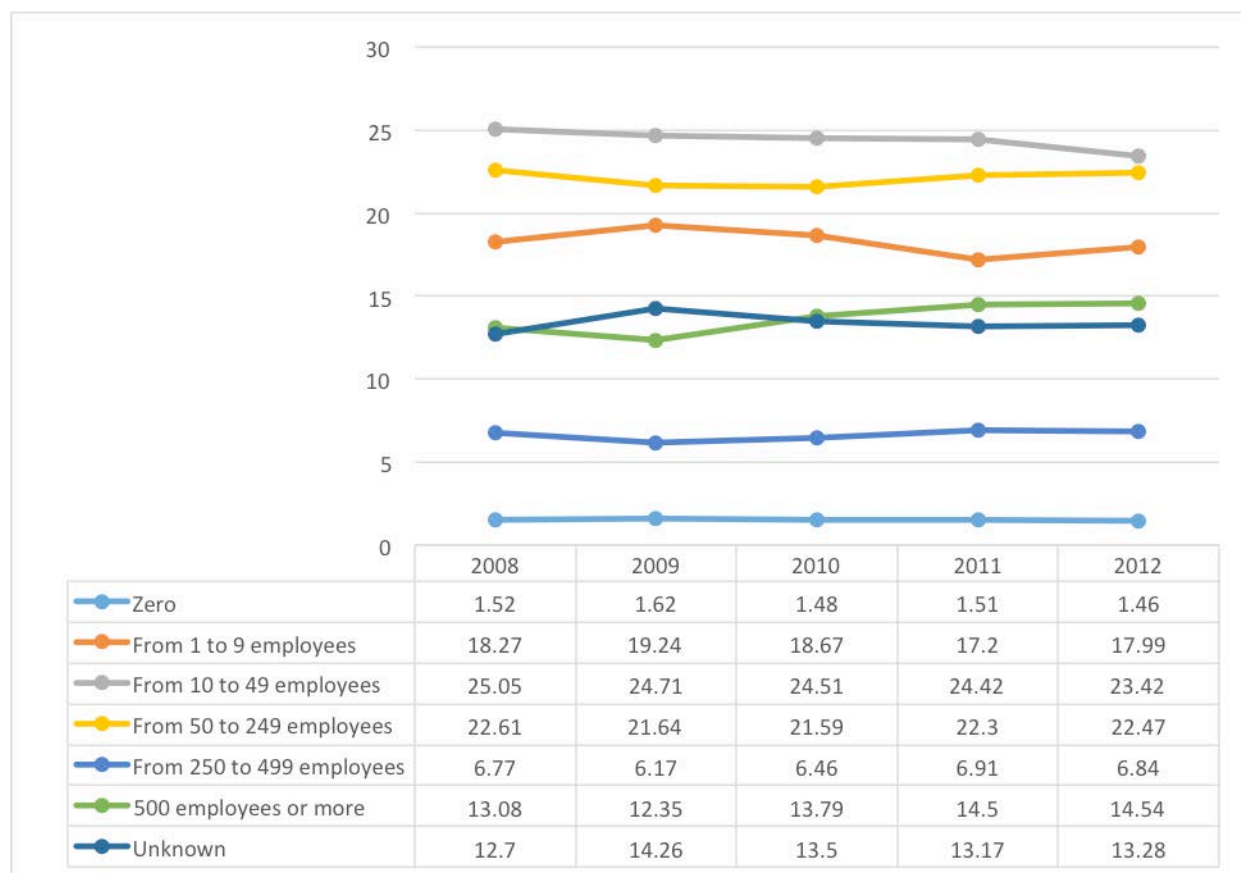
**Note:** Zero refers to the self-employed without employees.

**Source:** ESAW (European Statistics on Accidents at Work), available online<sup>11</sup>

Reported injuries resulting in lost time are, as already outlined, a less reliable objective indicator of outcomes, but here too recent aggregate data at EU level of incidents leading to more than three days' absence from work tend to support the conclusion that there is a greater frequency of such events among smaller firms. Past studies of the occurrence of these injuries have varied in their findings. For example, data show workers in micro firms apparently experiencing fewer reported incidents than those in small enterprises in some countries, while, in others, such as in the United States of America (USA), the occurrence of occupational injuries follows an inverse U pattern in relation to enterprise size (for reviews of past studies, see Nichols, 1997; Walters, 2001). EU data also suggest there may be similar differences between MSEs in this regard, which might be worthy of further exploration and research, but the currently available data do not allow for appropriate direct comparison.

<sup>11</sup> Data extracted from the Eurostat online database ([http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw\\_mi04&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw_mi04&lang=en)) on 14.10.2015.

**Figure 3.3: Share of non-fatal accidents (%) resulting in more than three days off work in the EU-27 within enterprise size classes in the period 2008–2012\***



\*NACE Rev.2, classifications A and C–N.

**Note:** Zero refers to the self-employed without employees.

**Source:** ESAW (European Statistics on Accidents at Work), available online<sup>12</sup>

As Figure 3.3 shows, in the current data for the EU-27 countries, when lost-time injuries are considered, most occupational accidents have been reported in small companies with 10 to 49 employees, followed by enterprises with 50 to 249 employees and micro enterprises. This suggests a pattern broadly similar to that for measures that include fatalities and serious injuries, although that for micro enterprises is somewhat anomalous and may be a reporting effect, again suggesting further study may be necessary before firm conclusions can be drawn on the effects of size.

### 3.1.2 Patterns — relevant differences in fatality and injury outcomes between sectors, occupations and Member States

As well as demonstrating a size effect, the in-depth research analysis referred to previously made clear that there were sectoral differences in fatality and injury rates. Other studies have also pointed to differences between occupations and, although the research is more limited, there are further indications of differences in fatality and injury rates between countries. Information derived from EU aggregate data generally confirm the presence of these differences overall, although in most cases the effects of size are not specifically accounted for. For example, recent data confirm that construction has the highest rate of reported injuries in most countries, only surpassed by agriculture, forestry and fishing in Denmark, Sweden and the United Kingdom (again, all sectors dominated by small and micro enterprises).

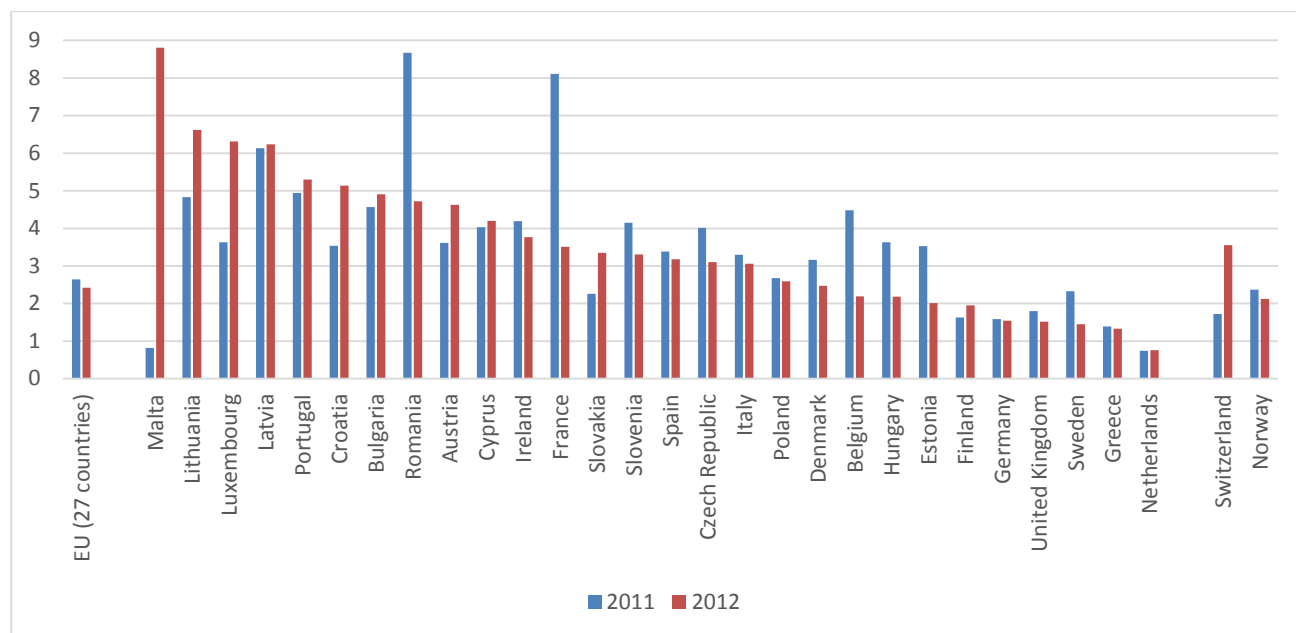
<sup>12</sup> Data extracted from the Eurostat online database ([http://appso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw\\_mi04&lang=en](http://appso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw_mi04&lang=en)) on 14.10.2015.



A further interesting but little explored feature of the relationship between establishment size and indicators of health and safety outcomes concerns the question of ownership. There is some evidence to suggest there are differences between public- and private-sector establishments, where size has little effect on outcomes in the former but an inverse relationship with health and safety outcomes in the latter — that is, poor outcomes are more frequent with decreasing size in the private sector (Sørensen et al, 2007). Within the private sector, there is possibly a further difference between outcomes in those establishments that are single independent enterprises and those that are establishments belonging to a larger concern. Unfortunately, although differences have been observed in more than one study of such patterns of ownership, the direction taken by such difference is inconclusive. In a Danish study, for example, poorer OSH outcomes were associated with independent small enterprises (Sørensen et al, 2007), while in an American study they were associated with those establishments that were part of larger organisations (Mendeloff et al, 2006). One explanation for the observations in the Danish case is that better performance could be associated with the effects of requirements of the larger concerns of which the establishments were a part in both the public and private sectors. Alternatively, as the authors of the American study suggest, better performance among small independently owned enterprises may reflect the determination of owner-managers in these firms to accept responsibility for ensuring the health and safety of their workers rather than seeing this responsibility as belonging to the more remote larger concern. However, the fact that each study indicates a contradictory finding suggests more than anything else that the effect of ownership is an issue requiring further investigation.

Features of the way in which work is organised have also been suggested as an important influential factor on the occurrence of injury, with outsourcing and subcontracting, for example, identified as possible influences on increased risk of accidents (see, for example, EU-OSHA, 2000:309). These are of course patterns of disorganisation in which the increased presence of MSEs often features prominently. Such practices are commonly found in sectors where injury rates are particularly high, such as construction. There are a number of studies that demonstrate that the organisation of work in these sectors may contribute to such elevated risk (see, for example, Pedersen et al, 2012; Holte et al, 2015). We will return to a more detailed discussion of the reasons for these effects in the following chapter.

There are also differences between EU Member States in patterns of reported injuries reproduced in EU aggregate data, as shown in Figure 3.4 for fatalities in all workplaces. However, such differences do not reflect any obvious patterns and, although Eurostat data are classified according to both enterprise size and national origins, little account is taken of the host of possible confounding variables that are likely to influence such information including, for example, important differences in reporting systems, in the definitions used in them and in patterns of the occurrence of MSEs in different sectors and countries, rendering present published comparisons of little use in serious research. Similarly, Venema et al (2009), following their secondary analysis of data from the Labour Force Survey (LFS) 2007 ad hoc module on accidents at work, concluded that attempts to explain differences in occupational injury occurrence between countries by demographic or work characteristics were futile. They could be influenced by such a wide range of factors on which they had little or no information, such as culture, policy, awareness and wording of the questionnaires and use of proxies, that they felt unable to draw conclusions concerning the effects of differences between countries (Venema et al, 2009:54). This is not to say that such comparison would be of no value, but a great deal more work is necessary before there are sufficient data which are robust and clear enough to allow meaningful interpretation. We return to the implications of this for future research in the conclusions to the present report.

**Figure 3.4: Standardised incidence rates (per 100,000 workers) of fatal accidents at work for 2011 and 2012<sup>13</sup> (Eurostat)**

### 3.2 Occupational ill-health

It is nowadays widely acknowledged that data such as those presented in the previous section describe only a small part of the evidence of the extent of work-related harm. If account is taken of the full range of data on work-related mortality and morbidity, the extent of this harm is greater than that suggested by data relating to occupational injuries and fatalities alone. For example, Hämäläinen et al (2009) estimated that there were 167,000 work-related fatalities in Europe each year, of which 159,500 were caused by disease; they further indicated that the average rate of disability and absence from work was as high as 25% of the workforce in Europe. More recent estimates (Nenonen et al, 2014) suggest even higher estimates of 224,825 work-related fatalities in Europe, 210,216 (94%) caused by disease (figures for 2010/2011). Moreover, while the authors suggested that fatalities resulting from workplace accidents were decreasing in Europe (as the figures in the previous section also indicate), the same could not be said for the far greater burden of mortality and morbidity caused by work-related exposures. These authors, like many others, acknowledge that the causes of work-related ill-health are both multiple and complex. Sometimes a work-related factor may be the only cause of a disease, but in other cases work-related factors, together with other factors, may be among those contributing to the increase in the risk of disease, or they may aggravate already existing diseases.

Here is not the place to debate the merits of these global estimates, but rather to make the point that a substantial proportion of the harm they indicate is likely to arise from work exposures in MSEs. Estimating this proportion with any degree of precision, however, is difficult, and there is no single reliable source. It is also made harder by the growth of precarious employment and labour churning through many jobs, especially among young workers. In addition, there is an increasing contribution of undeclared work conducted in the informal economy, the health and safety effects of which are missed by most reporting, as are most of the likely forms of harm experienced by sole traders. Again, many of these effects are likely to be magnified in smaller firms, as is discussed further below. There have been no reliable analyses in the research literature of large-scale datasets concerning the comparative occurrence of occupational ill-health among workers in MSEs. Such evidence that exists (for example,

<sup>13</sup> Eurostat: statistics explained, 'Accident at work statistics', available at: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Accidents\\_at\\_work\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Accidents_at_work_statistics).



the LFS ad hoc module on ‘Accidents at work and other work-related health problems’<sup>14</sup> does not suggest consistent patterns, but provides some indicators that work in small firms is a significant source of work-related ill-health. As shown in Table 3.1, for example, the highest proportions of self-reported ill-health are found in workplaces with fewer than 10 employees in 2 of 27 countries. Six countries show the highest figures for self-reported ill-health among workplaces with 11 to 19 employees, while in 10 countries the highest proportion comes from workplaces with 20 to 49 employees. In the remaining nine Member States, the workplaces with the greatest number of work-related health problems reported by employees are larger enterprises with more than 50 employees. In other words, in around two-thirds of these 27 countries, it is from small enterprises that the greatest proportions of work-related health problems are reported. This suggests, at the very least, that the problem of work-related ill-health is as significant in MSEs as it is elsewhere and possibly more so in most countries in the EU.

**Table 3.1: Persons reporting a work-related health problem by enterprise size (%)**

	10 employees or fewer	11 to 19 employees	20 to 49 employees	50 employees or more	Total
European Union (28 countries)	6.9	7.1	8.0	8.2	7.7
Belgium	5.9	6.0	7.9	7.7	7.1
Bulgaria	4.0	3.6	3.8	4.1	3.7
Czech Republic	5.3	4.1	5.1	3.8	4.7
Denmark	5.2	6.5	6.3	5.8	5.8
Germany (until 1990 former territory of the FRG)	8.4	8.5	10.3	9.2	9.1
Estonia	5.4	5.8	6.3	5.3	5.7
Ireland	1.9	2.0	2.2	1.9	2.0
Greece	3.5	4.7	4.6	4.6	3.9
Spain	4.1	5.1	5.1	5.3	4.6
France	10.8	10.9	12.5	12.7	11.9
Croatia	3.5	3.5	5.3	3.8	4.6
Italy	4.3	4.3	5.4	7.2	5.3
Cyprus	4.2	4.5	5.7	5.9	5.6
Latvia	6.1	6.1	6.0	8.3	6.0
Lithuania	2.7	-	-	2.7	2.7
Luxembourg	7.4	8.1	7.8	7.8	7.7
Hungary	2.7	3.3	2.8	2.8	2.9
Malta	-	-	-	3.5	3.4
Netherlands	-	-	-	-	-
Austria	13.2	10.7	13.9	12.9	13.2
Poland	11.5	10.7	11.8	11.6	12.5
Portugal	5.1	6.1	5.7	5.7	5.9
Romania	1.3	0.7	1.0	1.0	1.2
Slovenia	5.2	-	-	-	5.0
Slovakia	7.2	8.1	7.3	5.6	7.3
Finland	25.0	28.0	30.2	26.8	27.3
Sweden	20.6	22.6	23.5	23.9	22.8
United Kingdom	3.5	4.1	3.7	4.3	4.0
Iceland	-	-	-	-	-
Norway	9.9	11.1	12.1	11.2	10.9
Switzerland	9.6	9.1	12.6	9.8	10.6
Turkey	2.3	2.3	2.3	2.7	2.5

**Source:** LFS 2013, Eurostat

<sup>14</sup> ESAW (European Statistics on Accidents at Work), ‘Persons reporting a work-related health problem by sex, age and size of enterprise [hsw\_pb9]’, available at: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw\\_pb1&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hsw_pb1&lang=en) (last updated 09.02.2015).

There are also data from the LFS (2007) and the European Working Conditions Survey (EWCS) (2005) on work-related health problems reported by sector. Although these data are not analysed by enterprise size, among the sectors with the greatest levels of reported work-related health problems are those such as agriculture, mining, construction, manufacturing and transport, where physical health problems associated with work are anticipated and where small enterprises are also common. It is also noteworthy that, in other sectors, changes in the structure and organisation of work including greater privatisation, contractorisation and casualisation cause work intensification. These too are likely to lead to increased presence of smaller organisations as larger organisations downsize and outsource. Interestingly, for example, high levels of reported work-related health problems are evident in sectors such as education, health and social work, reflecting change in the nature of work-related ill-health and the increasingly high incidence of psychosocial health problems reported among workers involved in non-manual work such as is typical of these sectors. Here again there is a burgeoning literature addressing the effects of work intensification in these sectors, as well as its privatisation, contractorisation and casualisation — all cases in which a greater proportion of smaller enterprises are likely to be involved as larger organisations downsize and outsource activities formerly conducted in-house (see, for example, Marmot et al, 1991; Kuper and Marmot, 2003). Again, the relatively limited attention paid to enterprise size in surveys and analytical studies of work-related health in these situations means we have only limited evidence of size-specific effects. But, despite these limitations, indirect evidence would make it seem more likely than not that work in small enterprises in many sectors may lead to poor outcomes for physical and psychological health, just as the more robust evidence indicates it does for injuries and fatalities. In the light of this evidence, it would seem counterintuitive to imagine that for occupational health the opposite outcome to that found in relation to safety would apply. However, the absence of reliable data in this respect poses questions for further study and here again we will return to a further discussion of this issue in the conclusions to this report.

### 3.3 The experience of the work environment and working conditions in MSEs

Analysis of the experience of exposure to hazards at work in MSEs that impact on workers' health or safety is beset with the same challenges as those encountered in relation to injuries and ill-health. There is generally substantial literature analysing the occurrence and effects of exposure to physical, biological and psychosocial risks at work, including the experience of ergonomic and psychosocial hazards such as those associated with repetitive or stressful work, long working hours or work intensification. However, for a host of reasons, it is difficult to reliably disaggregate and analyse this information in ways that provide clear indicators of the differences in the patterns of experience of these risks in micro and small firms, and of whether or not such exposures are disproportionate features of work in such enterprises.

While there are Europe-wide surveys of working conditions and the work environment experienced in enterprises, as well as national surveys in some countries, there have been few robust or reliable secondary analyses of size differences in relation to such exposures on either a national or an EU-wide basis. However, some national surveys show the existence of such associations; for example, Danish data from the Danish Work Environment Cohort Study (DWECS) database show that there is a clear association between enterprise size and most of the *ergonomic strains* analysed for private-independent enterprises. The highest strains are found in the smallest enterprises, and they gradually decrease with increasing size. Results are most clear for strains on the back, back/neck and hand and there is a similar tendency for strains on the large muscle groups (Sørensen et al, 2007:1050). According to the same source, there is no specific size effect connected to strains due to repetitive work and standing/squatting, where all industrial sectors showed the same tendency, with the exception of wholesale and transportation, where strains on the back and neck increased with enterprise size (Sørensen et al, 2007:1050). There is some further support for these Danish findings found at the European level in the EWCS, but further analysis is required to explore this more fully. Significant complications, which need to be properly accounted for in such analysis, are the confounding and interrelated effects of size and sector on the risk profile of work environments. That is, it is often not clear to what extent elevated exposures to certain hazards or risks can be explained by the sector in which they occur and to what

extent they are a function of workplace size. Separating and understanding the two may have important implications for understanding the need for, and role of, preventive arrangements.

Other national surveys have focused less explicitly on differences in exposures in relation to workplace size; however, some also show such trends. For example, data from the SUMER survey show that in France workers in enterprises with fewer than 10 employees are more likely to be exposed to at least one carcinogenic agent. The situation is aggravated by the fact that the prevention policies are less developed in small enterprises: in 44% of the exposure situations involving a carcinogenic agent, the workers were not protected by collective protection measures, while this was only the case in 25% of the larger establishments (DARES, 2013). Reviewers of previous research have also found evidence from various sources showing that, generally, *chemical exposures* are greater in small enterprises than in large ones, an experience that they attribute to poorer application of protection measures in these enterprises (Sørensen et al, 2007; Walters, 2008). Similar trends have been found in national data in relation to some other variables — for example, ‘other hand/skin strain’, ‘mineral dust exposure’, ‘hand vibrations’ and ‘whole body vibrations’ — but no significant trend can be detected regarding indoor climate (Sørensen et al, 2007). In contrast, national surveys generally record a more positive experience of the psychosocial work environment among workers in smaller enterprises (although, as we explore further in the following section, here again this may be an oversimplification masking a more complex reality).

When examining the fifth EWCS data in detail, different patterns across the different size classes regarding specific strains are observed. For several hazards there appear to be different patterns of exposure experienced by workers in smaller enterprises from those in larger ones. For example, in relation to vibration, noise and temperature extremes, exposure in small enterprises is sporadic, while in larger ones it is more regular — this may reflect both different working patterns and different equipment in these workplaces, as well as differences between exposures in different sectors.

In summary, therefore, although there is quite extensive information on the experience of work and the work environment in both national and European surveys, the extent to which this material is useful for the comparative analysis of the effects of establishment or enterprise size on workplace exposures to hazardous situations is relatively limited. Even more worrying in this respect is that no real improvement is to be expected in the provision of survey data on these issues. If anything the situation may get worse. A recent inventory and analysis of 19 European-wide and national working conditions and OSH surveys focusing on employees, made as part of the FP7 InGRID project,<sup>15</sup> raises the alarm. The analysis firstly concludes that systematic national surveys on working conditions and OSH are not omnipresent in Europe, as they exist in fewer than half of the EU Member States (Szekér and Van Gyes, 2015). Moreover, several of them have recently been discontinued without a prospect of follow-up. Secondly, the study concludes that the quality and usability of the existing national surveys (in terms of continuity, design, response rates, coverage, documentation and quality control procedures) is below acceptable levels in most cases. Low scores on these quality indicators are chiefly related to the lack of a cohort design and problematic response rates (Szekér and Van Gyes, 2015). The study, therefore, concludes that systematic and robust surveys on working conditions and OSH in Europe are scarce and that the scarcity of data on these matters is likely to continue and contribute to a lack of systematic data on working conditions and health and safety in the future. Despite this disturbing scenario, there may be opportunities for further, more detailed, investigation of existing data that could be undertaken with more in-depth secondary analysis of national and European surveys to explore the implications of the findings of the present review. We will return to a discussion of these possibilities in the conclusion to this report.

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<sup>15</sup> The InGRID project is funded by the EU's Seventh Framework Programme for Research, Technological Development and Demonstration under Grant Agreement No 312691 and involves 17 European partners. Its aims are to integrate and to innovate existing, but distributed, European social sciences research infrastructures on ‘Poverty and Living Conditions’ and ‘Working Conditions and Vulnerability’ by providing transnational data access, organising mutual knowledge exchange activities and improving methods and tools for comparative research. For more information, see <https://inclusivegrowth.be>

### 3.4 Measures of the quality of work in small and micro firms in the EU

We noted in the previous section that past surveys have tended to record a more positive experience of the psychosocial work environment among workers in smaller enterprises than in larger ones. This is often linked to the idea that, although it may be more insecure, work in small firms is often more flexible, varied and socially integrated than is the case in larger organisations, where it is argued that the price paid by workers for the benefits of greater security associated with so-called permanent jobs may include the experience of inflexibility and monotony in the jobs undertaken and consequent anomie. As we will discuss in Chapter 5, there is also some evidence from older qualitative studies of the organisation of work in enterprises of different sizes that points to such conclusions. However, as we pointed out in the last chapter, the organisation of work is changing, and trends in recent decades call these conventional images into question. As a recent joint report from Eurofound and EU-OSHA (2014) notes, differences in psychosocial risk exposure exist in job content, organisational change, job security and career prospects between small and large companies. Large companies more often go through changes, and work involves more complex tasks. However, their workers have better conditions in terms of having the skills to cope with the work, as well as better career prospects and job security. As far as psychosocial risks are concerned, it indicates differences in the type of risk, but not necessarily in the overall prevalence of those risks. This suggests, at the very least, that generic conclusions concerning the effects of enterprise size on the relationship between working conditions, the psychosocial work environment and the quality of work may mask a reality that is both nuanced and quite complex. This is especially so if the conclusions of the previous chapter are borne in mind. There, it will be recalled, we suggested that the quantitative evidence indicated that a combination of situational and economic pressures helped drive a large proportion of small and micro enterprises to take 'low road' routes to their survival and many such firms were to be found in sectors in which workplace risks were high and OSH outcomes poor. The evidence of OSH outcomes already explored in the present chapter confirms this, but in this final section we present a further examination of the quantitative data to explore the possible relationship between working conditions and job quality, and especially to examine the possible effects of 'low road' survival strategies on the experience of job quality.

To do so we utilise some further secondary analysis of the fifth EWCS (Eurofound, 2012), which reports findings from a sample of more than 35,000 respondents to questions concerning their experience of working conditions. Using data from the survey, a classification of job types can be made, which throws some light upon their quality. Ramioul et al (2014), adapting a methodology used by Holman (2013), developed a typology of eight job types derived from groupings of the indicators in the fifth EWCS. Job types represent different ways in which a number of job characteristics (such as contract type, working time arrangements, level of autonomy and repetitive tasks) can be combined. Job types are a powerful way to demonstrate that job quality is in fact a multi-dimensional reality. For instance, some jobs may offer a permanent contract but have more than average repetitive tasks and low levels of autonomy. Other jobs may be characterised by high levels of autonomy but require long working hours. Still others are typically done in part-time work, which may be good from the work–life balance perspective, but they offer no career opportunities, etc. The fact that different combinations of job characteristics exist is precisely why they are an interesting tool to identify, in a more fine-grained way, the specific risks (and opportunities) to which workers in the different job types are exposed. When constructing job types based on the combination of a large number of job characteristics, it is obviously the case that some jobs accumulate mostly negative job characteristics, while others seem to offer mostly positive job characteristics. The first can be labelled low-quality jobs, the latter as high-quality jobs. The job types 'in the middle' combine both positive and negative characteristics and here, in particular, the classification is useful because the precise risks to which the workers in these job types are exposed can be very different.

The job types identified in the secondary analysis were active work, saturated work, supporting work, low-strain part-time work, repetitive work, passive work, emotionally demanding work and high-strain low-voice work. They are outlined in Table 3.2, depicting the different job characteristics and the scores on these characteristics that make up the classification of job types used. It needs to be borne in mind that the use of 'job types' is a statistical tool for clustering job characteristics. In reality, the actual jobs people will be doing in organisations may vary according to corporate strategies on, for instance, working

time arrangements. Hence, when looking at ‘job titles’ in the data source, these may fall under different job types.

**Table 3.2: Levels of job quality indicators for job types**

	Active work	Saturated work	Supporting work	Low-strain part-time work	Repetitive work	Emotionally demanding work	Passive work	High-strain low-voice work
<b>Work organisation</b>								
Autonomy and complexity	H	H	Low autonomy Moderate complexity	Low autonomy Moderate complexity	M	H	L	L
Repetitive tasks	M	L	M	L	H	H	H	H
Pressures <sup>16</sup> and risks <sup>17</sup>	M	High pressure Low risks	M	L	M	High pressure Moderate risks	High risk Moderate speed pressure Low emotional pressure	H
Fixed workplace	M	L	M	H	M	H	M/H	H
<b>Employment conditions</b>								
Wage	M/H	Very high	M	L	M	H	L	L
Permanent and full time	H	H	M	Moderate permanent Low full-time	M	M/H	L	L
Variable and atypical working time arrangements	M	H	M	L	M	H	M	M
Career opportunity and training	High opp Moderate training	H	L	M	M	Moderate opp High training	L	Low opp High training
<b>Social relations</b>								
Voice and say	High say Moderate voice	H	M	M	M	M/H	L	L
Support	H	M	H	M	M	Low man Moderate social	L/M	L

H, high levels of the indicator; M, moderate levels of the indicator; L, low levels of the indicator; opp, opportunities; man, support from management; social, support from colleagues. **Source:** Ramioul et al (2014:27)

Each job type is made up of combinations of ‘good’ and ‘bad’ job characteristics (Ramioul et al, 2014:24). However, differences between them in this respect give an indication of high, moderate or low job quality, as shown in Table 3.3.

<sup>16</sup> The pressure indicator is a combination of the indicators ‘dealing with people’ and ‘emotional pressure’.

<sup>17</sup> The risk indicator used by the author combines ergonomic risks, ambient risks and biochemical risks.

**Table 3.3: Classification of job types according to their quality of work**

High quality	Moderate quality	Low quality
Active work	Low-strain part-time work	Emotionally demanding work
Saturated work	Repetitive work	Passive work
Supporting work		High-strain low-voice work

Source: Ramioul et al (2014)

Analysis of the data from the fifth EWCS (Szekér et al, 2015) shows an association between job type and both physical health and psychosocial well-being. Table 3.4 indicates the average level of physical and psychosocial health for each job type. Job types associated with a high or moderate job quality are linked with significantly better physical and psychosocial health. Low-strain part-time workers, for example, have the highest scores on both physical (M=0.69) and psychosocial health (M=0.83). By contrast, job types which are referred to as low-quality jobs, such as emotionally demanding work, passive work and high-strain work, show a lower level of both physical and psychological health.

The relation between the quality of the job type and physical health is quite coherent — low-quality job types are associated with more physical health problems, with the exception of supportive work, presenting worse physical health than the other so-called ‘high-quality jobs’. On the other hand, psychological health is less clearly associated with job types that can be defined as good quality. Saturated work, which has high scores on almost all job quality dimensions, is associated with lower psychosocial health than most of the other job types. Passive work, by contrast, which is typically considered a low-quality job type, scores significantly better on psychosocial health than on saturated work and also than the other low-quality job types.

This analysis confirms the importance of acknowledging that job quality is a multi-dimensional reality with several job types having both ‘good’ and ‘bad’ characteristics and associated health outcomes. The fact that psychological health outcomes are not unambiguously associated with high-quality jobs should raise attention: indeed, it shows that psychosocial risks at work can also be pertinent for job types with on average high scores on different job quality dimensions. Further, the analysis confirms that physical and psychological health outcomes do not necessarily coincide in the same job types.

**Table 3.4: Differences between job types in terms of physical health and psychological health**

Physical health									Psychological health								
M	1	2	3	4	5	6	7	8	M	1	2	3	4	5	6	7	8
1	0.65	-	ns	H	L	H	H	H	1	0.82	-	H	ns	L	H	H	H
2	0.65	ns	-	H	L	H	H	H	2	0.76	L	-	L	L	ns	H	L
3	0.62	L	L	-	L	H	H	H	3	0.82	ns	H	-	L	H	H	H
4	0.69	H	H	H	-	H	H	H	4	0.83	H	H	H	-	H	H	H
5	0.54	L	L	L	L	-	ns	ns	5	0.75	L	ns	L	L	-	H	ns
6	0.53	L	L	L	L	ns	-	ns	6	0.65	L	L	L	L	L	-	L
7	0.52	L	L	L	L	ns	ns	-	7	0.76	L	H	L	L	ns	H	-
8	0.49	L	L	L	L	L	L	L	8	0.65	L	L	L	L	L	ns	L
	0.60									0.79							

1 = active work  
2 = saturated work  
3 = supportive work  
4 = low-strain part-time work  
5 = repetitive work  
6 = emotionally demanding work  
7 = passive work  
8 = high-strain work

**Note:** Read the figure across rows. H indicates that the job type in the row has a significantly ( $p < 0.05$ ) higher level of physical or psychosocial health than the job type in the column. L indicates a significantly lower level of physical or psychological health. ns indicates that there is no significant difference between the two job types.

**Source:** Szekér et al (2015:26)

Using this classification of the data on working conditions derived from the fifth EWCS and comparing the experience for different enterprise sizes (Figure 3.5 and Table 3.5), we find that, while the total proportion of high-quality jobs increases with company size, the proportion of active jobs remains greater in small companies than in those with more than 50 employees. This seems to equate with the popular notion of the likelihood of greater task complexity and autonomy in the work undertaken by individuals in smaller companies. But, when indicators of pay and security are included, working conditions in these companies are not as good as those in larger enterprises, again as is widely intuitively understood. We



also note that, among poor-quality jobs, the proportion of passive jobs (where there is high repetitiveness and little worker voice) declines as workplace size increases. In our view, this was a notable observation, which contrasts with the popular idea that repetitive work is typical for large enterprises with high levels of division of labour, while in SMEs tasks are supposed to be broader. It is also worth bearing in mind that there are significant risks associated with repetitive work.

A key point in relation to job quality — which is still often underdeveloped in ‘traditional’ OSH analysis — is the relationship between a number of job characteristics and psychosocial risks. Indeed, work organisation, levels of division of labour and eventually job content are key determinants of psychosocial well-being at work. In particular, the combination of high pressure at work and low autonomy plus little support generates jobs with obvious high levels of stress and few opportunities for learning, as is well-established in the seminal literature on psychosocial risk. But simple jobs with low autonomy and where there are fewer career and training opportunities (features which, in combination, lead to our ‘passive jobs’) also bear such risks, as not only are the opportunities to develop skills very low, but also the jobs are also stressful. Table 3.4 confirms that emotionally demanding work, high-strain work, passive work and saturated work, which are all characterised by high pressure, are associated with lower psychosocial well-being. The relatively high levels of passive jobs with low autonomy, repetitive tasks, high pressure and little support suggest that psychosocial risks in MSEs may not be lower than in large companies. In addition, we observe that supporting jobs, characterised by low monotony, moderate pressure but high support, are much less prevalent in MSEs. Both findings seem counterintuitive but should raise awareness of the psychosocial risks (and limited learning and career opportunities) that workers may be exposed to in small and micro enterprises, and require further study.

The measure of low worker voice among smaller firms is an equally important observation. It sits uncomfortably with notions of more harmonious labour relations and an identity of interest that are popularly associated with work in smaller firms. As we shall explore further in subsequent chapters (see, for example, Chapter 5), such popular notions are also not supported by qualitative research on social and labour relations in small firms, which paints a far more nuanced picture.

**Table 3.5: Job types by company size<sup>18</sup> (%)**

	Active work	Saturated work	Supporting work	Low-strain part-time work	Repetitive work	Emotionally demanding work	Passive work	High-strain work
<b>1-person workplace (n=595)</b>	24.2	12.7	9.8	14.9	5.2	2.2	28.7	2.4
<b>2- to 9-person workplace (n=6107)</b>	27.5	6.4	18.6	13.5	7.3	2.4	22.7	1.6
<b>10- to 49-person workplace (n=7372)</b>	24.4	8.7	18.2	15.1	7.1	3.4	20.1	2.9
<b>≥50-person workplace (n=7801)</b>	23.1	12.8	20.7	11.8	7.8	4.3	15.8	3.9

Source: Fifth EWCS data, Eurofound (2010)<sup>19</sup>

A similar pattern is repeated across sectors and occupational groups, where in both cases job quality increases with enterprise size for most sectors and types of occupational groups. One exception is in agriculture, where the pattern is reversed and there are fewer high-quality jobs in large enterprises than

<sup>18</sup> Total number of people working at the workplace (at the local site).

<sup>19</sup> <http://www.eurofound.europa.eu/surveys/2010/fifth-european-working-conditions-survey-2010>



in smaller ones. Caution is warranted when interpreting the latter finding, however, as the number of cases of large enterprises in agriculture included in the fifth EWCS is quite small.

We are also concerned in the present study with examining differences between Member States, and in particular between the clusters into which they can be grouped based on common features of their economic profiles, regulatory profiles, health and safety systems, and so on. As we discuss in greater detail in Chapter 4, we have used five clusters of countries with common features to explore these effects. At first sight there would appear to be no obvious pattern in the distribution of quality in job types in small firms across these groupings. However, as Table 3.6 shows, there are some disparities.

**Table 3.6: Job types in MSEs (<50 employees) by institutional regime (%)**

	Active work	Saturated work	Supporting work	Low-strain part-time work	Repetitive work	Emotionally demanding work	Passive work	High-strain work
<b>Western EU (n=3396)</b>	23.7	9.1	20.7	13.4	8.3	2.9	19.5	2.5
<b>Northern EU (n=1530)</b>	31.5	12.5	15.7	7.0	10.8	8.4	10.5	3.7
<b>UK and Ireland (n=800)</b>	29.3	9.3	22.1	13.8	6.5	3.1	14.4	1.6
<b>Southern/Latin EU (n=3898)</b>	23.5	6.5	15.1	14.9	6.5	2.7	28.3	2.5
<b>Central and Eastern EU (n=4450)</b>	30.0	6.0	18.2	17.8	5.6	1.8	19.2	1.6

**Source:** Fifth EWCS data, Eurofound (2010)<sup>20</sup>

Western European countries (Germany, Netherlands, Austria, Belgium and Luxembourg) have surprisingly low levels of active jobs in small firms compared with the other groups. Supporting jobs are also quite common in this group, with one-fifth of the employees holding this type of job, which has a moderate score on nearly all job characteristics. Passive jobs also represent around one-fifth of the jobs in the Western European group, implying low levels of task autonomy and complexity and high risks owing to the repetitiveness of the work.

Northern European countries (Denmark, Sweden and Finland) have the highest rate of active jobs in small firms, with nearly one-third of employees in such jobs. Saturated jobs (with high wages and high frequency of atypical working hours) are also particularly present in these countries, characterising about one in eight jobs. Looking at the moderate-quality jobs, low-strain part-time work is limited compared with other groups, but the proportion of repetitive work is higher, affecting some 10% of jobs. The share of emotionally demanding jobs is also significantly higher than in other groups, but passive and high-strain jobs are less represented, which balances the proportion of low-quality jobs.

The United Kingdom and Ireland are marked out by a relatively high levels of active jobs and 22% of supporting jobs. The proportions of other job types do not differ much from other groups.

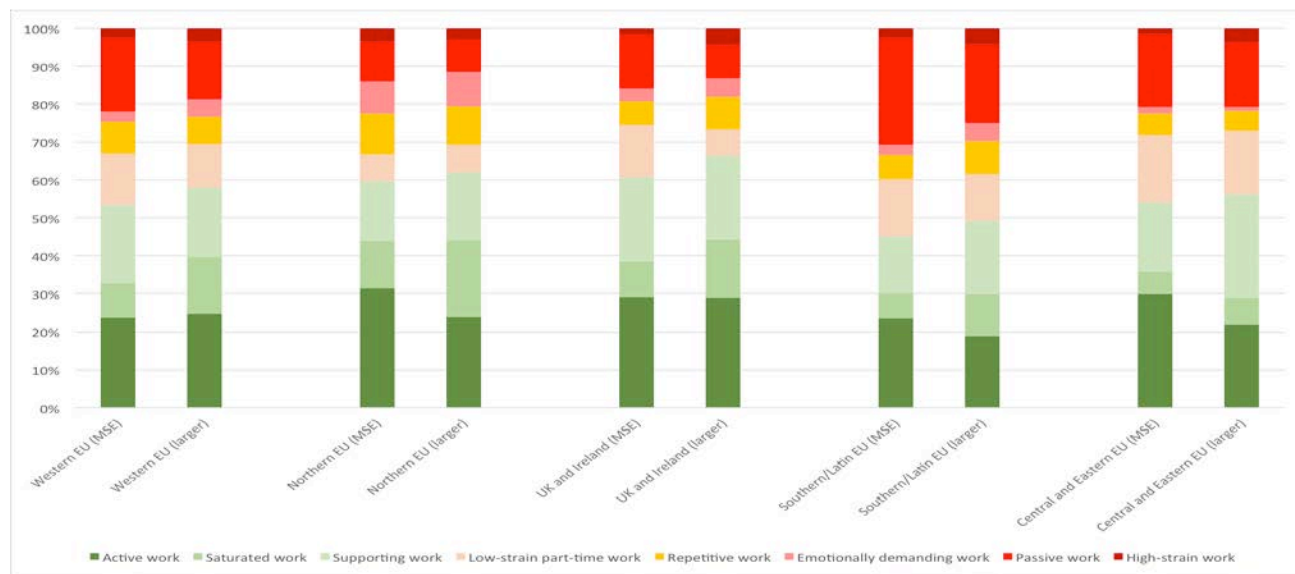
Southern or Latin European countries (Greece, Spain, France, Italy, Cyprus, Malta and Portugal), on the other hand, distinguish themselves from the others with a low proportion of high-quality jobs in small firms representing some 45% of employment (compared with 60% in Northern Europe and the United Kingdom and Ireland). Likewise, the Southern European countries show a very high percentage of low-quality jobs in MSEs (33.5%), particularly passive jobs, which constitute nearly 30% of employment.

Finally, jobs in Central and Eastern Europe do not differ substantially from the general picture; around 30% of the jobs in these countries are active jobs, and a little under 20% are passive jobs. Notable is the proportion of low-strain part-time jobs, which accounts for nearly 18% of employment.

<sup>20</sup> <http://www.eurofound.europa.eu/surveys/ewcs>

Figure 3.5 shows the differences between MSEs and larger enterprises within our study groupings.

**Figure 3.5: Job types by institutional regime: comparison between MSEs and larger enterprises**



**Source:** Fifth EWCS data, Eurofound 2010<sup>21</sup>

Here again, the data indicate an overall tendency towards more high-quality jobs in larger enterprises than in MSEs. However, in all the groups except Western Europe, active jobs are more frequently present in MSEs than in larger enterprises. But passive jobs are also more represented in SMEs. Larger enterprises have more jobs within the categories in between.

In short, while care needs to be taken with generalisations about such a heterogeneous group as small firms, analysis of data from the fifth EWCS suggests overall that there is a relationship between workplace size and job quality, as measured by the combination of indicators used by Ramioul et al (2014). Moreover, this relationship, in which higher quality jobs are associated with larger workplaces, is found across most of the groups of Member States we have used in this project, albeit substantially more pronounced in some than in others. At a glance, such findings would therefore seem to be broadly in line with what might be anticipated from the conclusions of the previous chapter concerning the predominance of ‘low road’ survival strategies of MSEs. At the same time, it is acknowledged that of course such a strategy is not applied universally in small firms — indeed, as we also saw in the previous chapter, there are other, more successful, small firms in which positive measures of job quality combine with lower risks and ‘high road’ business strategies.

Nevertheless, the main finding from the review in this and the previous section suggests that, for the substantial proportion of MSEs in Europe, something of a circular relationship may exist between features of work in these enterprises and the broader economic environment in which they are situated. And this circular relationship helps to both drive the ‘low road’ strategies pursued by owner-managers and the consequent preponderance of poorer job quality for the workers involved. Several things follow from this and suggest a need to examine further the features of the economic environment in which these enterprises are situated. The first is that, as these enterprises feature so prominently in both the current European economy and the policies that give support for its direction, it is of some concern that low-quality jobs would seem to be heavily represented. Second is the possible circularity of the economic influences at work here, which act to drive a perpetuation of this situation for a substantial proportion of small firms. Third, and perhaps more pertinent to the present review, is the relationship between such low-quality work and poor arrangements for health and safety in the same workplaces, and here the extent to which the former may be a proxy for the latter is of concern. While individual studies rarely make such a direct link, the research literature on work-related health and the economic restructuring in which the rise to prominence of micro and small firms has been so marked is collectively strongly

<sup>21</sup> <http://www.eurofound.europa.eu/surveys/ewcs>

suggestive of such a connection (see, for example, Quinlan et al, 2001; Quinlan and Bohle, 2008; Kieselbach, 2009; for extensive reviews of this literature). All these findings are suggestive of areas that would benefit from further and more detailed investigation.

### 3.5 Conclusions

The function of this chapter has been to continue to build the profile of work, safety and health started in the previous chapter using more direct measures of safety and health outcomes, and factors in the work environment that may contribute to them. Its purpose is to provide background to the analysis in subsequent chapters concerning explanations for the outcomes experienced in micro and small firms, the wider contexts in which they and intervention strategies aimed at improving them are situated, and the overall effects of such contexts. Given the considerable volume of potentially relevant quantitative material and the limitations of space in the present review, the profile presented in this chapter has out of necessity been a qualified outline of key features and a commentary concerning the reliability of the information on which they are based.

Several features of the quantitative assessment of the safety and health of work in small and micro firms emerge. Firstly, the most reliable analysis attests that, overall, work in these firms poses an increased risk of fatalities and serious injuries compared with work in larger firms. The less analytical treatments of published national and EU-wide aggregate data on fatal and serious injuries also broadly support this finding, although, as might be anticipated, those on lost-time injuries are more equivocal.

Other quantitative evidence of the comparative health and safety experience in smaller enterprises is both less clear and subject to less robust analysis than that which has been applied in the case of occupational fatalities and injuries. However, there is nothing in the analysis of these data to suggest a comparatively safer or healthier experience of work in smaller enterprises than in their larger counterparts and, given the substantial toll of work-related mortality and morbidity in the EU as a whole, these data present no cause for complacency concerning that part of it attributed to work in MSEs. Moreover, it appears that workers in MSEs are not necessarily less prone to psychosocial risks, because of combinations of low levels of autonomy and support and high levels of pressure and repetitive tasks.

As we have further shown in the present chapter, these measures can be matched to a large extent with measures of job quality taken from European surveys which show that, in the main, there is a relationship between the 'low road' survival strategies of a large proportion of these enterprises and the greater experience of measures of poorer quality jobs in MSEs than in their larger counterparts. Opportunities to explore these associations in the aggregate data at European level, together with more in-depth studies within small and micro firms and the national and sector contexts in which they are situated, could further increase our understanding of the degree of correlation that might exist between the experience of job quality and working conditions in these enterprises.

There is widespread agreement in the literature that the primary reasons for the uncertainties in interpreting existing data are found in the systems and understanding involved in reporting and recording the incidents that make up the data. Fundamentally, as many observers have noted, many of these indices are socially constructed and this has significant effects on the quality and quantity of the data collected. For example, their social construction influences what are understood to be reportable incidents (even when attempts are made to provide clear and even legally mandated definitions), which has been shown to vary considerably in different work situations, including across workplace size bands. Indeed, one of the most widely recognised influences on what and how much is reported is enterprise size (see, for example, Dong et al, 2011), with far more under-reporting from smaller than larger workplaces (Sørensen et al, 2007). Under-reporting of injury is especially significant in agriculture, construction, transport and hospitality, all sectors in which micro and small firms are particularly evident. There are further well-recognised differences between the types and amounts of harm reported in surveys in which reporting is based on some form of self-assessment of experience by individuals and in those in which reporting is based on standard diagnostic criteria used by practitioners to assess harm experienced by others. In this situation, for example, many of the large-scale routinely repeated surveys such as those undertaken by Eurofound and the LFS, and various nationally conducted surveys on work

and health, are based on self-assessment, while more specific sources of data relating to compensated ill-health, legally mandated requirements on reportable diseases and ad hoc and varied arrangements for reporting specific conditions, such as cancers that may be occupationally related, are all based on standard diagnostic criteria. The two sources are not comparable. In the latter case, under-reporting of occupational diseases may be difficult to estimate, as not only differences in national registries (i.e. what is reportable), but also physicians' diagnosing and reporting behaviour, may have an effect on the results (Spreeuwiers et al, 2010). Beyond the differences in the national definitions and lists of occupational diseases, it is also recognised that short-latency illness and traumatic incidents are easier to relate directly to workplace activity than are long-term latent illnesses, such as cancers, where connection with the workplace may have long since ceased (Ruser, 2010:4). It is also the case that data are entirely missing in the case of the informal sector, in which there are many micro and small firms and which largely escape regulatory scrutiny and where risks may be high but evidence of outcomes unrecorded.

Moreover, exploration of size effects is hampered further because many of the published surveys are normally not aimed at identifying size effects, and the extent to which the information they contain fully or specifically describes outcomes in relation to enterprises of different sizes varies considerably.<sup>22</sup> A further problem in relation to self-reported data, such as that obtained in surveys on working conditions, is sample bias, where establishments with higher compliance levels are more likely to participate in surveys, and results may suggest a more positive picture than is warranted. Finally, while national- and EU-level agencies have made considerable efforts to harmonise the available data and the reporting systems that generate them, major differences often remain between them which limit the possibilities for meaningful comparative interpretations. As Tómasson et al (2011) showed in their analysis of the national registration systems for occupational accidents in the Nordic countries, there are differences on a range of important issues of definition and inclusion, even between quite homogeneous groups of countries. Furthermore, in European studies, translation issues can also be problematic. For example, LFS data from France have been excluded from some secondary analysis owing to the different interpretations of survey questions (Venema et al, 2009; Eurostat, 2014).

All these factors confound the meaning of reported experiences in surveys and routinely collected data concerning the work environment and work-related health and safety outcomes. They need to be taken into account when interpreting such data. They also suggest that there are perhaps opportunities for more robust secondary analysis of existing sources which could be explored in future studies. This said, the conclusion remains that, even if robust and reliable analysis of the comparative health outcomes associated with work in MSEs is not available in the same ways as for serious injuries and fatalities, there is much indirect evidence to support the conclusion that, overall, the work environment, the quality of jobs and health-related outcomes in a substantial proportion of these firms are, on a balance of probabilities, likely to be poorer than in their larger counterparts.

In the remainder of this report, we turn our attention to a review of understandings of the possible reasons for the outcomes presented in this chapter, but we will have cause to return to some of the uncertainties discussed here when we consider their implications for further research in the conclusions to this report. In particular, we will have more to say concerning the effects of national determinants of OSH outcomes in MSEs, including contextual differences in political/economic/regulatory regimes in different national situations and their possible relationships with OSH outcomes in MSEs, and the problems associated with the reliability of data and how some of them might be overcome in further research. We will also return to the implications for further research of, for example, the effects of different types of ownership and the consequences for OSH outcomes in MSEs brought about because of the positions they occupy within prevailing business and economic structures.

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<sup>22</sup> Even if in large-scale European surveys (EWCS, LFS, European Company Survey) the data are often not disaggregated by company size, this is also not always taken into consideration in the available secondary analyses of the data. For example, secondary analysis of the LFS 2007 data (Venema et al, 2009) only differentiates between two size classes, namely micro enterprises (fewer than 10 employees) and all others (10 or more employees). The scarcity of size-based analyses also holds for many of the national surveys' data: national reports on the state of occupational health often do not provide an analysis of the data by company size, even if the data are statistically disaggregated.

## 4 What's wrong with OSH in small and micro enterprises and why?

The central purpose of this chapter is to explore how, why and in what ways the OSH arrangements in small and micro firms have failed to prevent the comparatively high levels of work-related harm reported in both national- and European-level data and in many individual research studies at country and sector level.

We briefly give a recap of the evidence for poor OSH outcomes discussed previously, before turning to the findings of research that provide some analysis of the causes of these outcomes. We are mainly concerned here with the findings of research literature in which OSH is a central interest, which focuses on the arrangements in place to manage or prevent exposure to risk or its harmful outcomes and seeks to explore why these arrangements appear to be so frequently underdeveloped or inappropriate in micro and small firms. While this (mainly qualitative) research literature has burgeoned in the past 10 to 15 years, its findings serve to confirm those of earlier studies. To help place them in a current European context and to provide a sense of the scale of the situation they analyse, we also draw on a secondary analysis of findings of the recent ESENER-2. This provides some quantified comparative evidence of the current presence and operation of arrangements for health and safety across a range of workplaces, from micro to large, in all EU Member States, and helps to situate the qualitative analysis of the research literature.

### 4.1 Why small is not necessarily beautiful — poor outcomes and a poor environment — evidence from the literature

We documented, in Chapter 3, how there is now well-established evidence of the effect of the size of enterprises upon their health and safety outcomes and how more recent findings have tended to confirm earlier insights. For example, before the end of the 1990s, robust analysis of safety outcomes showed a greater incidence of fatalities and serious injuries to be more likely among micro and small firms than among their larger counterparts, and subsequent research has confirmed this understanding. The comparative position of work-related health outcomes in MSEs has remained complicated and less clear for reasons largely to do with the way these outcomes are measured and the means of reporting and recording them, but such outcomes give little cause for supposing that work is healthier in micro and small firms than it is in larger ones. Moreover, as we also indicated in Chapter 3, comparing our composite measures of job quality with data on exposures and working conditions from European surveys such as the EWCS demonstrated that job quality and working conditions in small and micro firms are related, and more often generally poorer than those experienced in larger enterprises.

The key question, of course, is why this is so. The literature on small and micro firms is in agreement concerning several of the more obvious reasons.

Firstly, as is clear from the data presented in Chapter 2 and is widely acknowledged in the specialist literature on health and safety in small enterprises, a large proportion of these organisations are short-lived, marginal concerns with very limited resources, pursuing something of a precarious 'low road' business existence. As such, they are unlikely to invest heavily in hardware to achieve engineering or infrastructural solutions to health and safety problems (Nichols, 1997; Hasle and Limborg, 2006; MacEachen et al, 2008). Secondly, most studies of the procedural arrangements for health and safety in place in small and micro firms indicate they are less well developed than in larger firms (see, for example, Hasle et al, 2009; Walters, 2001, 2002). This is the case in relation to arrangements such as OSH plans and policies, workplace risk assessment and control, accessing and using competent advice, providing information on safe work, and engaging workers and their representatives in all these matters, which are derived from current process-based regulatory requirements (Hasle and Limborg, 2006; Sørensen et al, 2007; Micheli and Cagno, 2010; Hasle et al, 2012a; Legg et al, 2015). Further studies show that this is also the case in relation to the awareness of owner-managers concerning such requirements, as well as with regard to their possession of the resources and competencies to deliver them (Walters, 2008; Olsen et al, 2010). Moreover, while it is evident that MSEs differ markedly from



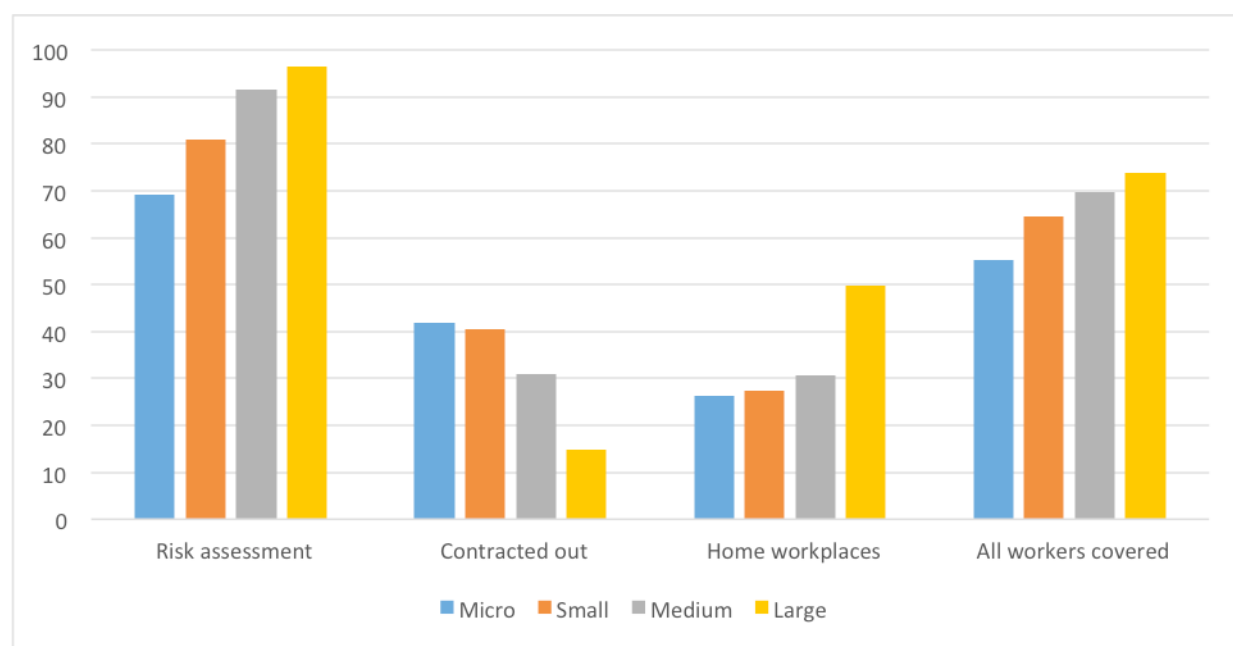
larger enterprises in their capacities to put in place arrangements for OSH, it is important to acknowledge that there is also significant heterogeneity among them (Micheli and Cagno, 2010).

Recent evidence, which helps to confirm these findings, is found in ESENER-2, conducted on behalf of EU-OSHA. This was a large EU-wide survey in which just over two-thirds (69%) of the sample of 49,320 enterprises were MSEs. Of these, most were small (20,829, 61%, compared with 13,060, 39%, micro), most were single companies (25,178, 74%, compared with 8,567, 25%, which were part of a multi-enterprise organisation) and most were in the private sector (28,322, 84%, compared with 5,429, 16%, public sector). The sectors they most commonly operated in were wholesale and retail trade, repair of motor vehicles and motorcycles (NACE group G: 7,679, 23%), followed by manufacturing (NACE group C: 4,925, 15%) and construction and human health and social work activities (NACE groups F and Q: 2,816, 8%, and 2,863, 8%, respectively). In addition to the EU-28, ESENER-2 covered Albania, Iceland, the Former Yugoslav Republic of Macedonia, Montenegro, Norway, Serbia, Switzerland and Turkey. However, the analyses in this chapter are based only on the 40,584 responses from enterprises in the EU-28, which make up 82% of the total number of responses.

When data from ESENER-2 concerning the presence of procedural arrangements for OSH are compared across enterprises of various sizes, several key issues in relation to size effects on OSH management arrangements emerge. As the following examples show, they are consistent with what might be anticipated from existing literature. If they are considered comparatively (i.e. where enterprises of different sizes stand in relation to each other on key indicators of OSH management), in every case, there is a significant and substantial difference between levels of implementation in smaller firms compared with larger ones.

For example, the ESENER-2 data indicate that carrying out regular risk assessments was less common in MSEs than in medium and large ones, and, where they were carried out, MSEs were more likely than their larger counterparts to contract the work out to external providers and, where relevant, to exclude home workplaces and/or indirectly employed workers (Figure 4.1).

**Figure 4.1: Proportion (%) of enterprises reporting that they carry out regular risk assessment, that it is contracted out and that it covers home workplaces and all workers (including those not directly employed), by enterprise size, EU-28**

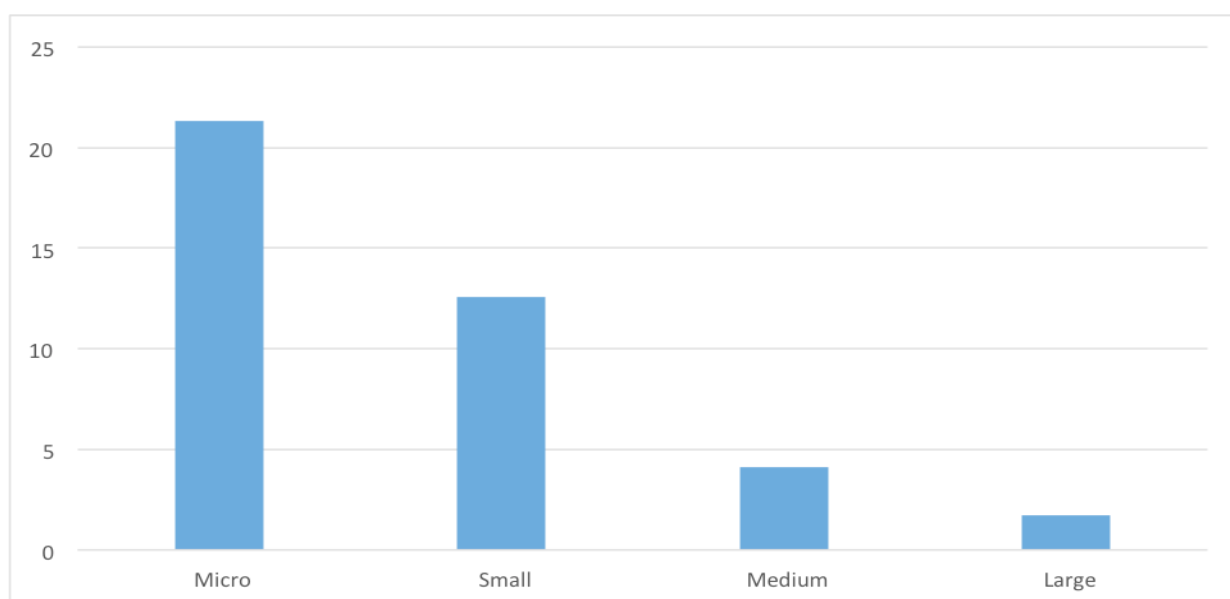


Source: ESENER-2, EU-OSHA

Among those MSEs that reported *not* carrying out regular risk assessments, of the reasons given for *not* doing so, feeling that the hazards and risks were already known (84% of micro and 81% of small enterprises) or that there were no major problems (82% and 78%) were much more commonly reported than that the procedure was too burdensome (22% and 24%) or the necessary expertise was lacking (24% and 33%).

Twenty-nine per cent of the micro and 31% of the small enterprises that did *not* carry out regular risk assessments reported that other measures were taken to check for health and safety in the establishment.<sup>23</sup> This was somewhat lower than the proportions for medium and large enterprises that did not carry out regular risk assessments (48% and 51% respectively). Overall, a little over one-fifth (21%) of micro enterprises and 13% of small enterprises did not carry out risk assessment *or* use any other measures (Figure 4.2).

**Figure 4.2: Proportion (%) of enterprises reporting that they do not carry out regular risk assessment or other checks, by enterprise size, EU-28**



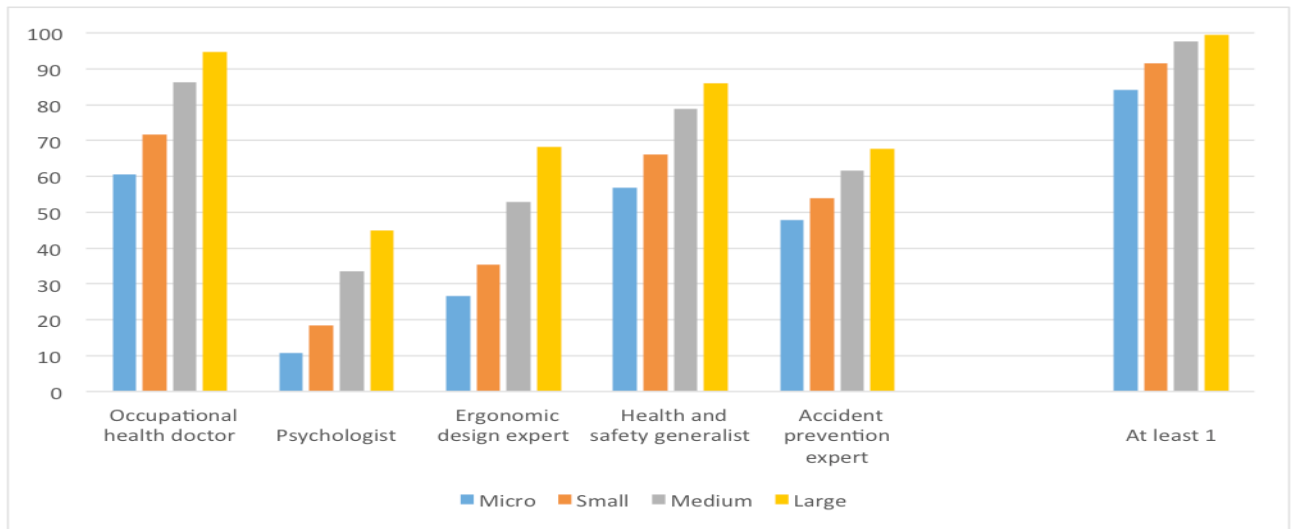
**Source:** ESENER-2, EU-OSHA

Despite the finding that among MSEs risk assessment was more likely to be contracted out to external providers (probably in some cases reflecting the regulatory requirements of the EU Member State), their use of OSH services was lower than that of medium and large enterprises. The services they most commonly reported using were an occupational health doctor and a generalist on health and safety (Figure 4.3).

<sup>23</sup> Such other measures included checking that emergency routes were kept free, visual checks on workers' compliance with safety rules and regular but undocumented workplace inspections (among MSEs that carried out these other measures, these were reported by 85% and 88%, 89% and 86%, and 69% and 67% of micro enterprises and small enterprises respectively).



**Figure 4.3: Proportion (%) of enterprises reporting the use of various OSH services, by enterprise size, EU-28**

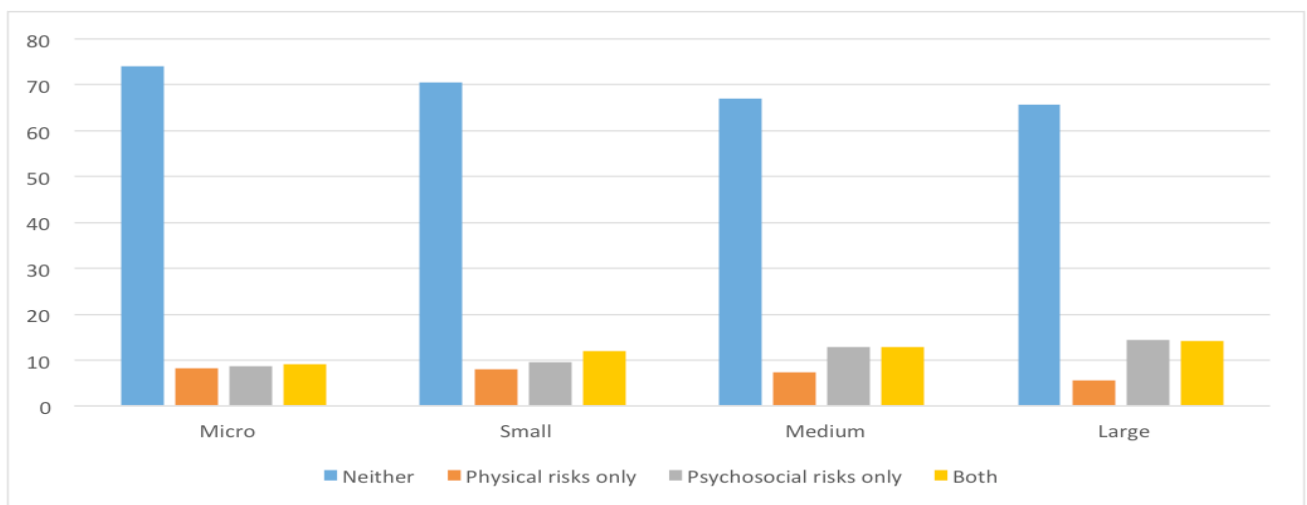


**Source:** ESENER-2, EU-OSHA

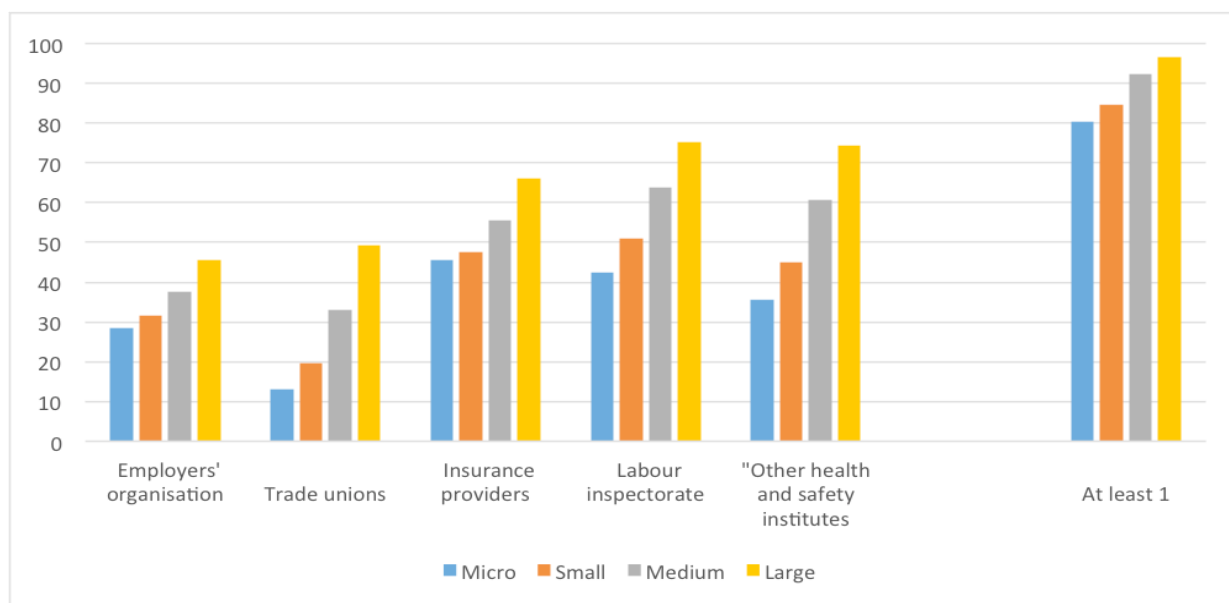
However, the proportion of respondents that did *not* feel that their enterprise was lacking information or adequate preventive tools for any of the physical or psychosocial risks addressed in ESENER-2 was highest among micro and then small enterprises (Figure 4.4). In addition, while insurance providers were generally most commonly cited as a source of health and safety information for all enterprise sizes, among other possible sources of information, smaller enterprises reported they were less likely to have used trade unions, the labour inspectorate and other OSH institutes as sources of information than larger ones (Figure 4.5).

The quantitative findings from ESENER-2 on these matters, therefore, largely confirm what might be anticipated from previous (mainly qualitative) research. That is, they not only suggest that OSH arrangements required by regulation are found less frequently in smaller enterprises than among larger ones, but also that there is less awareness of the *need* for such arrangements among smaller enterprises than among their larger counterparts.

**Figure 4.4: Proportion (%) of enterprises reporting that information or adequate preventive tools were lacking for physical and psychosocial risks, by enterprise size, EU-28**



**Source:** ESENER-2, EU-OSHA

**Figure 4.5: Proportion (%) of enterprises reporting the use of various sources of health and safety information, by enterprise size, EU-28**

**Source:** ESENER-2, EU-OSHA

Taking a lead from earlier secondary analyses of the data from the first ESENER (ESENER-1) (van Stolk et al, 2012a), a composite variable of various measures of the arrangements enterprises make for managing OSH in the workplace was created to give an indication of where enterprises in the ESENER-2 dataset fall along a spectrum of good OSH management practice (Table 4.1). Seven survey questions relating to good OSH management practice were included. The responses to those questions shown in the first column of Table 4.1 were each given a score of 1 before they were summed to produce a single measure. Scores ranged from 0 to 7, with a mean of 5.13 (standard deviation 2.09) and, as Table 4.1 and Figure 4.6 indicate, they increase with enterprise size. This shows that smaller enterprises tend to have fewer of the measures of good OSH practice in place than larger ones. However, it is important to note here that three of the measures of good practice are dependent on a fourth, as the questions about the coverage of risk assessments and their frequency and documentation were only asked of respondents reporting that their enterprise carried out regular risk assessments. Nevertheless, the pattern of increasing numbers of good OSH practices with increasing enterprise size remains when these three measures are excluded from the composite variable. The key point, though, is that a number of the measures of good OSH practice in ESENER-2 are predicated on the premise that workplace OSH management is based on a formal risk assessment procedure — but the survey's findings, in keeping with other sources, suggest that for a sizeable proportion of MSEs this is not the case.

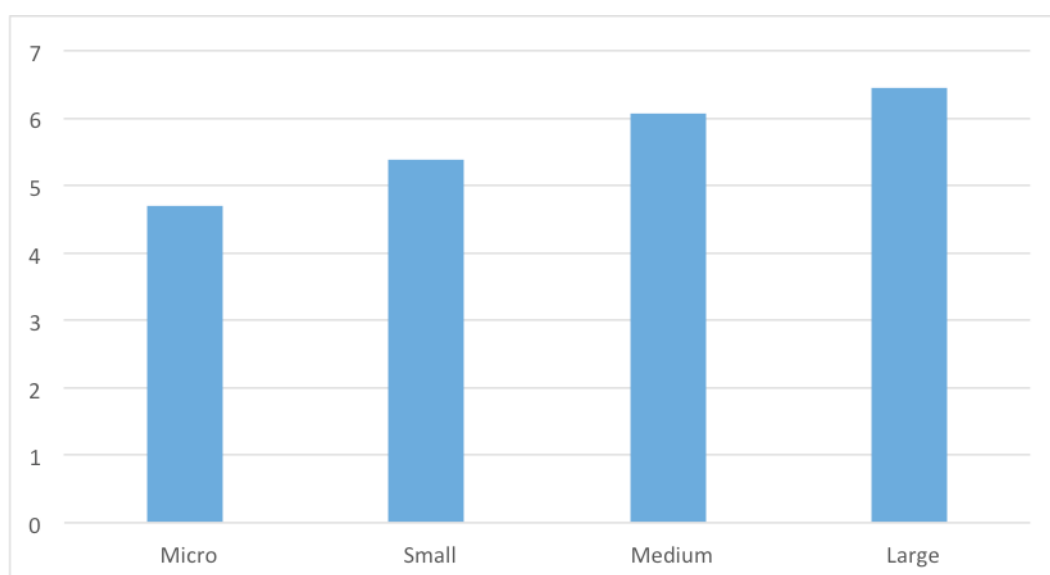
**Table 4.1: Proportion (%) of enterprises reporting the presence of each of the measures included in the OSH management composite variable, by enterprise size, EU-28**

	Micro	Small	Medium	Large
Written health and safety policy available to all	88	91	95	96
Routine analysis of sickness absences	42	54	68	76

	Micro	Small	Medium	Large
Regular risk assessments	69	81	92	96
Routine risk assessment of at least one aspect <sup>24</sup> (only asked of those carrying out risk assessment)	65	78	90	95
Risk assessment within the previous year (2013 or 2014) (only asked of those carrying out risk assessment)	58	68	78	87
Documentation of risk assessment (only asked of those carrying out risk assessment)	62	76	89	95
Provision of workers' training in at least one area <sup>25</sup>	87	91	96	98

Source: ESENER-2, EU-OSHA

Figure 4.6: Mean OSH management score, by enterprise size, EU-28



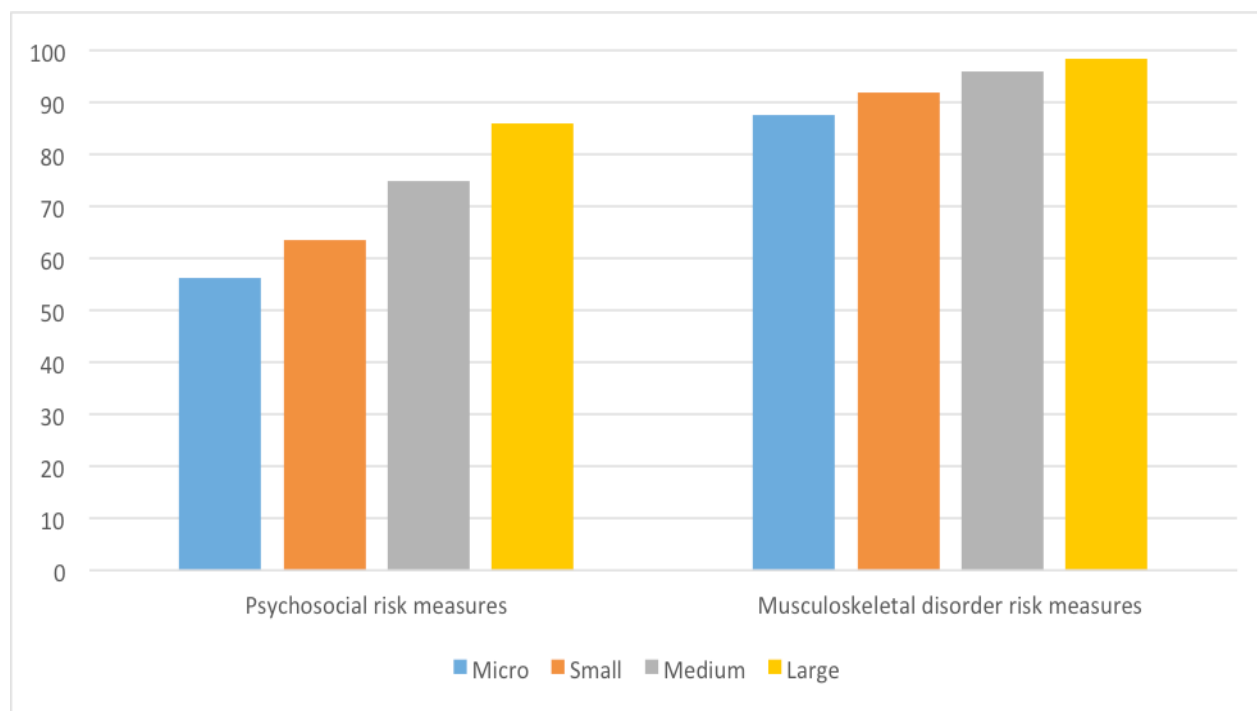
Source: ESENER-2, EU-OSHA

ESENER-2 also examined arrangements more specifically addressing the management of psychosocial risks<sup>26</sup> and musculoskeletal disorders in the last three years. Here again, MSEs were less likely than medium and large enterprises to have used such measures (Figure 4.7).

<sup>24</sup> Aspects were the safety of machines, equipment and installations; dangerous chemical or biological substances, where relevant; work postures, physical working demands and repetitive movements; and exposure to noise, vibrations, heat or cold.

<sup>25</sup> Areas were the proper use and adjustment of working equipment and furniture; the use of dangerous substances, where relevant; how to lift and move heavy loads, where relevant; and emergency procedures.

<sup>26</sup> Such measures were the reorganisation of work in order to reduce job demands and work pressure; confidential counselling for workers; the set-up of a conflict resolution procedure; and intervention if excessively long or irregular hours are worked.

**Figure 4.7: Proportion (%) of enterprises reporting that they had implemented psychosocial and musculoskeletal disorder risk prevention measures, by enterprise size, EU-28**

**Source:** ESENER-2, EU-OSHA

A second composite variable was created, using the approach described above, to give an indication of enterprises' standing on a spectrum of good practices in relation to the management of ergonomic and psychosocial risks (van Stolk et al, 2012b) (Table 4.2). Scores ranged from 0 to 5, with a mean of 2.60 (standard deviation 1.23), and again increased with enterprise size (Figure 4.8), suggesting that arrangements for managing ergonomic and psychosocial risks are also better in larger organisations. Again, it is important to note here that one of the measures included in the composite score, relating to aspects of work that were risk assessed, was asked only of respondents who indicated that their enterprise carried out regular risk assessments.

**Table 4.2: Proportion (%) of enterprises reporting the presence of each of the measures included in the ergonomic and psychosocial risk management composite variable, by enterprise size, EU-28**

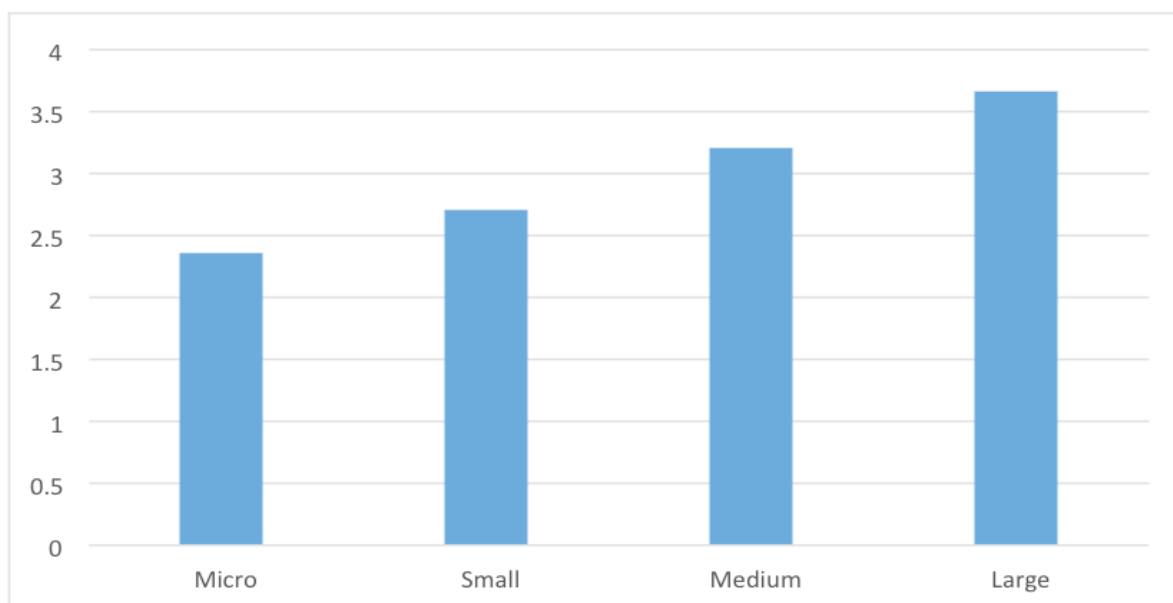
	Micro	Small	Medium	Large
Use of a psychologist	11	19	34	45
Supervisor–employee relationships and/or organisational aspects such as work schedules, breaks or shifts routinely risk assessed (only asked of those carrying out risk assessment)	49	59	71	81
Use of at least one psychosocial prevention measure in the last three years <sup>27</sup>	56	64	75	86

<sup>27</sup> Measures were the reorganisation of work in order to reduce job demands and work pressure; confidential counselling for workers; the set-up of a conflict resolution procedure; and intervention if excessively long or irregular hours are worked.

	Micro	Small	Medium	Large
Use of at least one musculoskeletal disorder prevention measure <sup>28</sup>	88	92	96	99
Provision of training for workers on how to prevent psychosocial risks such as stress or bullying	33	38	46	56

Source: ESENER-2, EU-OSHA

Figure 4.8: Mean ergonomic and psychosocial risk management score, by enterprise size, EU-28



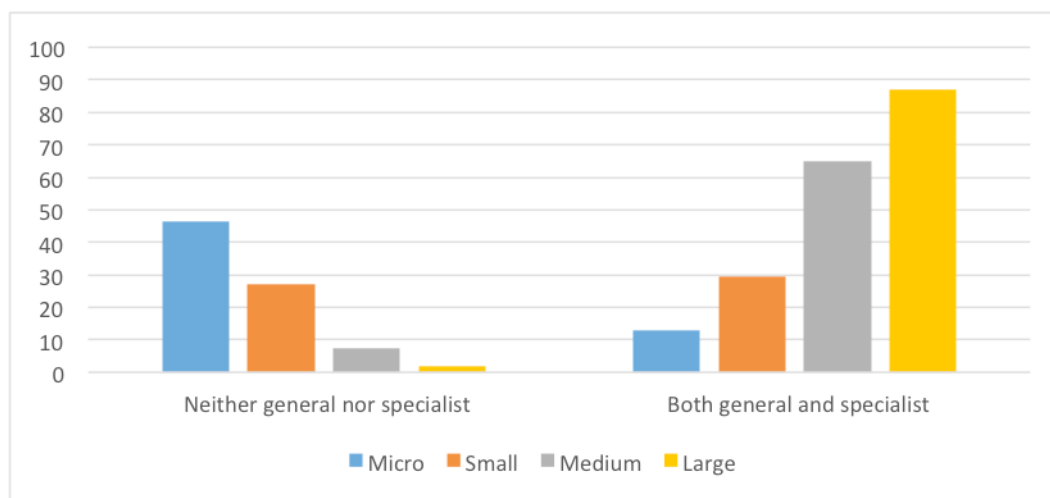
Source: ESENER-2, EU-OSHA

It is widely accepted that worker participation plays an important role in enhancing the effectiveness of arrangements made in relation to health and safety within enterprises. Figures 4.9 and 4.10 indicate the proportions of ESENER-2 respondents reporting various forms of worker representation and worker involvement in health and safety by enterprise size. Not surprisingly, a relationship with enterprise size is again demonstrated in the evidence, with greater presence of some form of worker participation<sup>29</sup> in larger enterprises.

<sup>28</sup> Measures were equipment to help with the lifting or moving of loads or other physically heavy work, if relevant; rotation of tasks to reduce repetitive movements or physical strain, if relevant; encouraging regular breaks for people in uncomfortable or static postures including prolonged sitting; and provision of ergonomic equipment, such as specific chairs or desks.

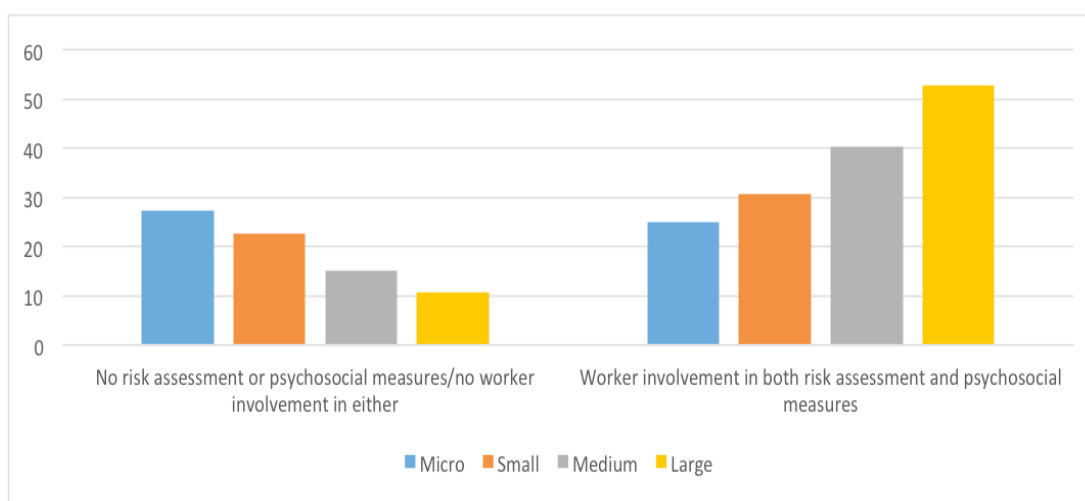
<sup>29</sup> It should be noted here that the size effect in relation to worker involvement principally reflects the greater implementation of measures by larger enterprises than by smaller enterprises. So, where risk assessment and related measures and measures to address psychosocial risks exist, there is little variation in worker involvement in their design and implementation by enterprise size; however, crucially, in a much greater proportion of smaller enterprises than larger ones, risk assessment and related measures and measures to address psychosocial risks do not exist.

**Figure 4.9: Proportion (%) of enterprises reporting the presence of general and specialist health and safety arrangements for worker representation, by enterprise size, EU-28**



Source: ESENER-2, EU-OSHA

**Figure 4.10: Proportion (%) of enterprises reporting worker involvement\* in the design and implementation of measures taken following risk assessment and measures taken to address psychosocial risks, by enterprise size, EU-28**



\*Involvement is defined as the respondent agreeing that, when measures had to be taken following a risk assessment, employees were usually involved in their design and implementation and that employees had a role in the design and set-up of measures to address psychosocial risks. The former was only asked of those respondents whose establishment carried out regular risk assessments, and the latter was asked of those respondents whose establishment had used any of four measures to prevent psychosocial risks in the previous three years.

Source: ESENER-2, EU-OSHA

A previous secondary analysis of the ESENER-1 dataset showed that having both general and specialist forms of worker representation *in combination* with having high levels of management commitment to health and safety was strongly linked to higher levels of good OSH management practice and to their perceived efficacy (EU-OSHA, 2012). In order to consider if this was also the case among MSEs, a third composite variable of various measures of management commitment included in ESENER-2 was produced using the approach described above (Table 4.3). Scores ranged from 0 to 6, with a mean of 3.25 (standard deviation 1.87). Again, mean scores increased with enterprise size indicating that smaller enterprises responded positively to fewer of the management commitment measures than larger

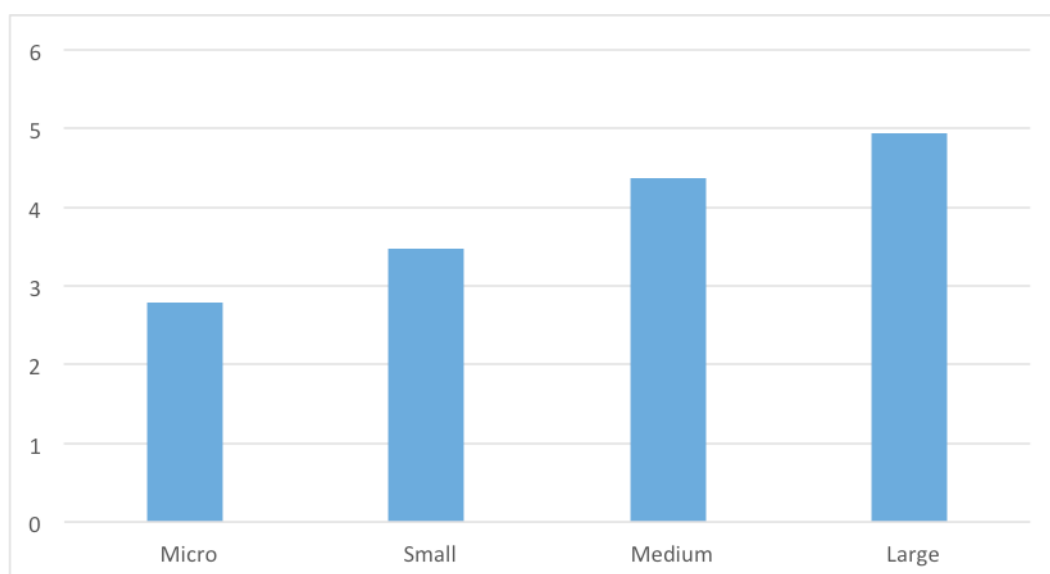
enterprises (Figure 4.11). As before, it is worth noting here that some of the measures included in this composite score are asked only of those reporting that risk assessments are regularly carried out and, in one case, of those reporting that arrangements for worker representation were in place — again highlighting the sometimes awkward fit between the assumptions on which good practice measures are based and workplace practice in small and micro enterprises.

**Table 4.3: Proportion (%) of enterprises reporting the presence of each of the measures included in the management commitment composite variable, by enterprise size, EU-28**

	Micro	Small	Medium	Large
Specific budget for health and safety measures and equipment	35	44	57	68
Findings from risk assessments provided to workers or their representatives (only asked of those carrying out risk assessment)	60	73	85	93
Risk assessment seen as a useful way to manage health and safety (only asked of those carrying out risk assessment)	62	73	84	88
Regular discussion of health and safety between management and workers' representatives	27	41	66	83
Workers' representatives provided with training during work time (only asked of those with representation arrangements in place)	37	51	70	81
Health and safety regularly discussed in team meetings	59	67	75	82

Source: ESENER-2, EU-OSHA

**Figure 4.11: Mean management commitment score, by enterprise size, EU-28**

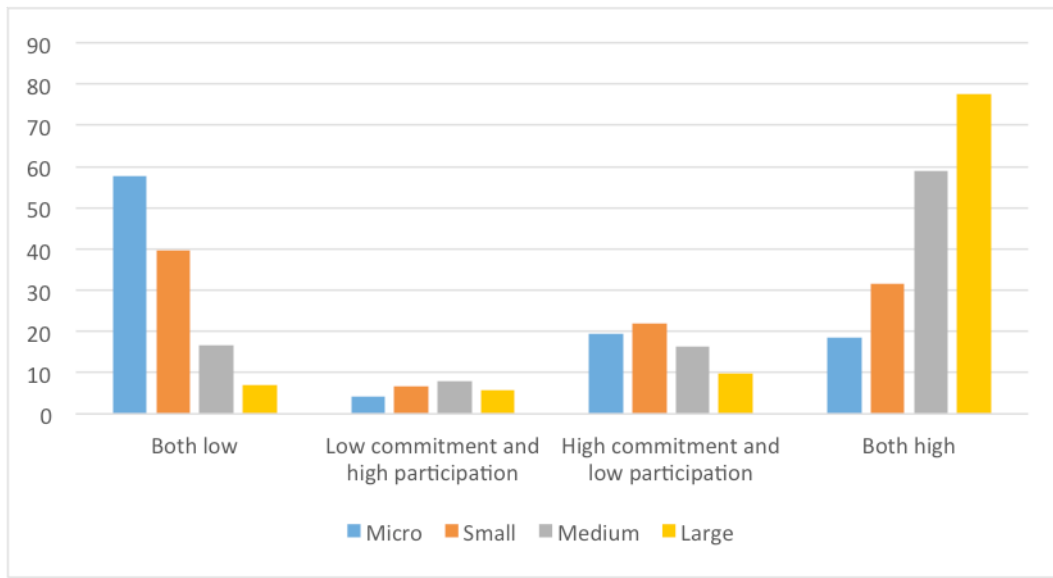


Source: ESENER-2, EU-OSHA



The measures of participation and management commitment were further combined, such that high levels of participation were defined as having three or four (of the four possible) arrangements for worker representation and worker involvement, and high levels of management commitment were defined as a score of 4 or more (out of 6) on the composite measure. Here again, an enterprise size effect was apparent (Figure 4.12) and the presence of these combined measures was far more likely in larger enterprises than in smaller ones.

**Figure 4.12: Proportion (%) of enterprises reporting each of the four possible combinations of management commitment and worker participation, by enterprise size, EU-28 (%)**



**Source:** ESENER-2, EU-OSHA

All of this suggests that the commitment to arrangements for worker participation on health and safety may be substantially lower in MSEs than in medium and large ones — a finding that is entirely consistent with findings of qualitative research on the subject.

The ESENER-2 data, therefore, provides persuasive quantitative evidence that micro and small firms lag behind their larger counterparts in terms of their arrangements for the assessment of risk, levels of management commitment to and worker participation in health and safety, and levels of good practice in relation to both general OSH and ergonomic and psychosocial risk management. However, the results of ESENER-2, like those of ESENER-1, generally indicate quite high absolute levels of implementation and operation of many of the indicators tested, especially when compared with national measures of the same indicators. The conventional explanation for these results is that they reflect the sample selection methods, which lead to inclusion in the survey of a preponderance of respondents that regard themselves as active in OSH and compliant with requirements. This may be reflected in the survey's cooperation rates, which also show a size effect: the overall cooperation rate was 22%, but this varied from 17% among enterprises with five to nine employees to 33% among those with 250 or more employees. In addition, the influence of this self-selection bias is reinforced by the data collection methods, which rely on respondents' self-assessment of their situation. Nevertheless, the key point about the comparative results is that despite this bias the size effects remain consistent. In summary, therefore, the data suggest that, even within the 'best end' sample of MSEs in the survey, a lower implementation and a lower awareness of the need for workplace risk assessment or other OSH procedures for both traditional and emergent risks is evident in micro and small firms than in their larger counterparts — which, as we have pointed out, is consistent with the findings of qualitative research on small and micro firms. This latter work has repeatedly shown that not only are low levels of procedural arrangements for health and safety observed in MSEs, but also a lack of recognition or awareness of

the need for them is evident among their owners and managers (see, in particular, Hasle et al, 2009, 2012a; Olsen et al, 2010).

However, some caution is warranted before drawing firm conclusions, as results of surveys such as ESENER-2, in which, as we have highlighted above, inquiry is framed in ways that are mainly relevant to experiences in larger firms, may be somewhat tautological when applied to MSEs that do not possess the prerequisites to enable such experiences in the first place. Here, in particular, it is important to recognise the assumptions behind the ‘preferred model’ of arrangements for OSH in all enterprises in the EU, and to consider the relevance of measures of its implementation to the realities of the situations found in many micro and small firms. The questions addressed in ESENER were framed around legal requirements that are applied to all enterprises in Europe regardless of size and are the ‘common processes and mechanisms’ found in European Directives on OSH.<sup>30</sup> The shift from prescriptive OSH regulation to the current process-based approach, which has occurred throughout the EU, arguably assumes capacities for its delivery that are derived mainly from a knowledge base of experience within large organisations. Importantly, in this respect, forms of OSH management emphasised by process regulation require access to, and understanding of, a ‘knowledge infrastructure’, in which matters such as workplace risk assessment, prevention plans and policies, worker engagement, auditing and evaluation are situated and explained. However, a key finding of qualitative research on health and safety in small and micro firms is that such knowledge and the access required to it are found far less often in smaller firms (Micheli and Cagno, 2010; Masi and Cagno, 2015). It is evident that the questions asked in ESENER-2 mainly measure the institutionalised presence of such procedures — for example, documented risk assessment, specific budgets for OSH, written OSH policies, discussions with worker representatives, and so on — and may be unable to probe sufficiently into the real OSH practices of small and micro firms to adequately reflect them. However, despite this limitation, the available quantitative data, when taken together with the strong evidence from qualitative studies, show very clearly that MSEs lack the capacity for systemising their arrangements for health and safety and go some way to explain their poor performance in terms of OSH outcomes.

Returning to the evidence from qualitative research, several previous reviews of this work have concluded that limited development of competency, information and training on OSH in small and micro firms, combined with poor investment in plant and equipment, limited experience of business operation (as a result of the short life-cycle of many enterprises) and inability to afford the support of external professional expertise, all contribute to a culture of limited action and awareness on the part of owner-managers in MSEs (Walters, 2001:140, 2002:40–46, 2008:181–182; Hasle and Limborg, 2006; MacEachen et al, 2008). Moreover, for smaller firms, these influences are not effectively countered by pressure from either organised labour or the state — as is sometimes the case in larger firms — because of the inaccessibility of workers in these enterprises to both trade unions and to labour inspection (Walters, 2004a, b). In this scenario, it is observed that the perspective and personality of the owner-manager of a small firm often dominate and determine operational practices. Wider research on owner-managers indicates that their priorities lie not in OSH but elsewhere. As Hasle and Limborg (2006:8) observe:

*....most small enterprises can be described as organisations which have to fight for survival with the owner as the responsible person who, like an octopus, has to handle many different issues at the same time and consequently, to no surprise, health and safety is not always high on the agenda.*

Following their extensive review of research literature up to 2004, these authors suggest that the key to understanding the position of health and safety in small and micro firms lies with gaining a better understanding of the pivotal role of the owner-manager. The way the business for which they are responsible helps shape their identity and, reciprocally, how the powerful influence of their personality, culture, attitudes and beliefs guide the development of the business in the enterprise they both own and manage, as well as that of their relations with their employees — who may be in weak and dependent

<sup>30</sup> Indeed, not only are they referred to in the Directives, they are also addressed in the European Commission’s ongoing *ex post* evaluation of their effectiveness. This exercise, the results of which have not been made publicly available at the time of writing, aims to evaluate the practical implementation of the EU Directives. It is claimed to cover their relevance, effectiveness and coherence, as well as their ‘administrative burdens’. It is said to have a special focus on SMEs and it is broadly compliant with the EU Regulatory Fitness and Performance Programme (REFIT).

positions in relation to employment security — are all key issues. At the same time, as we described in Chapters 2 and 3, owner-managers are embedded in networks of customers, competitors, advisers and regulators of their business affairs, all of whom they may prioritise as key to their survival. Studies show that what happens concerning health and safety in these enterprises is, therefore, strongly influenced by the position of owner-managers in all these relations. And they further show them to often have relatively low educational qualifications, with little formal experience of enterprise management, placing high value on their perceptions of their individualism and the link between their own identity and that of their business, while at the same time having limited trust in those who might be helpful towards improving OSH in their business. They may trust, for example, their financial advisers or sometimes their suppliers, but they remain wary of other external agencies, including those with capacity to provide professional advice on health and safety, and are wary of what they perceive to be externally imposed state burdens on their businesses, including those on OSH (Genn, 1993). At the same time, research has pointed out that advice to small firms on OSH, embedded as it is within the professional conceptualisations of these matters, often fails to take account of the situated understandings that owners and workers in these enterprises possess concerning the realities of their operational activities (Champoux and Brun, 2015).

In summary, a review of research literature on OSH arrangements and their outcomes in MSEs confirms that these arrangements to manage such risks are less well developed in smaller enterprises than in larger ones. It shows that the owner-managers in these enterprises are key players in determining how OSH is addressed in their enterprises, but also that they frequently have only limited capacities to do so.

## 4.2 The question of national comparison

The Member States of the EU are not identical. Despite efforts to harmonise regulatory and economic policies, there remain major differences between them. It would be surprising if in the face of such economic, regulatory and cultural differences the profiles of OSH in MSEs were identical in each Member State. And, indeed, as measures from both ESENER-1 and ESENER-2 (as well as from a host of other European-wide surveys) make clear, there are significant and substantial differences between Member States in workplace arrangements and their outcomes. However, there have been relatively few studies that have examined these differences and managed to relate them to national differences in wider political, economic, regulatory or cultural features.

From our secondary analysis of the ESENER-2 data, we find a pattern of national effects that is broadly consistent with those identified in previous studies of ESENER-1 (EU-OSHA, 2013) and these differences hold up among MSEs when they are examined separately.

Before exploring this analysis further, we first need to outline something of its rationale. There are 28 Member States in the EU; each has some unique features, some that are shared with other Member States and others that are broadly characteristic of all Member States. Many of these features — such as the regulatory character and administration of OSH provisions and institutional arrangements for the surveillance of compliance; the labour relations systems, their historical development and the power of the actors within them; the nature of the economy, the spread of productive activities and services, the relative size of the public and private sectors as well as economic policies; systems and policies for social welfare; and so on — all help to determine groupings of Member States which have something in common. Researchers have generally found such groupings helpful when trying to undertake comparative analyses in Europe. We felt that a comparative examination of the determinants of OSH arrangements in MSEs would be no exception. For reasons of simplicity of comparison, in this review we therefore grouped the 28 Member States of the EU into five clusters. Our rationale for this clustering is based on that used in a recent EU-OSHA project (EU-OSHA, 2013:11). For the purposes of the present review and to achieve consistency with terminology used in other classifications, some changes have been made to the group names used in the original study and some groups have also been merged, but the resulting classification remains similar to those widely used in comparative studies of European political economies. This leads to the following groups:

1. *Western EU*: Germany, the Netherlands, Austria, Belgium and Luxembourg.
2. *Northern EU*: Denmark, Finland and Sweden.

3. *United Kingdom (UK) and Ireland*
4. *Southern/Latin EU: Greece, Spain, France, Italy, Cyprus, Malta and Portugal.*
5. *Central and Eastern EU: Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia, Slovakia and Croatia.*

This division is based on differences in the national political, regulatory, economic policy and labour relations contexts in which workplaces are situated that may be significant in influencing the operation of process-orientated OSH regulation within the workplace. As a result of EU Framework Directive 89/391, this approach to regulation of OSH now characterises the main statutory provisions in all EU Member States and has for some time formed the dominant discourse on the regulation of OSH in most advanced market economies. It is a development with origins in the systems of ‘internal control’ in Nordic countries and a result of the influential Robens Report in the United Kingdom (Robens, 1972) and the subsequent debates concerning regulating the management of occupational risks. From the 1970s onwards (and arguably earlier in Nordic countries), successive revisions of national and EU regulatory measures on OSH have displayed a shift away from prescriptive standards towards those of a more ‘goal-setting’ and process-based type. In parallel, there has been a strong orientation in policy, advocating approaches to regulating OSH that enhance and support employers and managers to be more systematic in their approaches to managing health and safety within their enterprises and, at the same time, that encourage them to go beyond mere compliance with prescriptive standards in delivering best practice in their management of health and safety risks. Together these approaches characterise the so-called ‘regulated self-regulation’ of OSH that is practised to varying degrees in all the Member States of the EU (and in the majority of advanced market economies globally). It is, however, acknowledged that different Member States adopted these approaches at different times and transposed them in a range of different national and economic contexts (Frick et al, 2000; Walters, 2002; Walters et al, 2011).

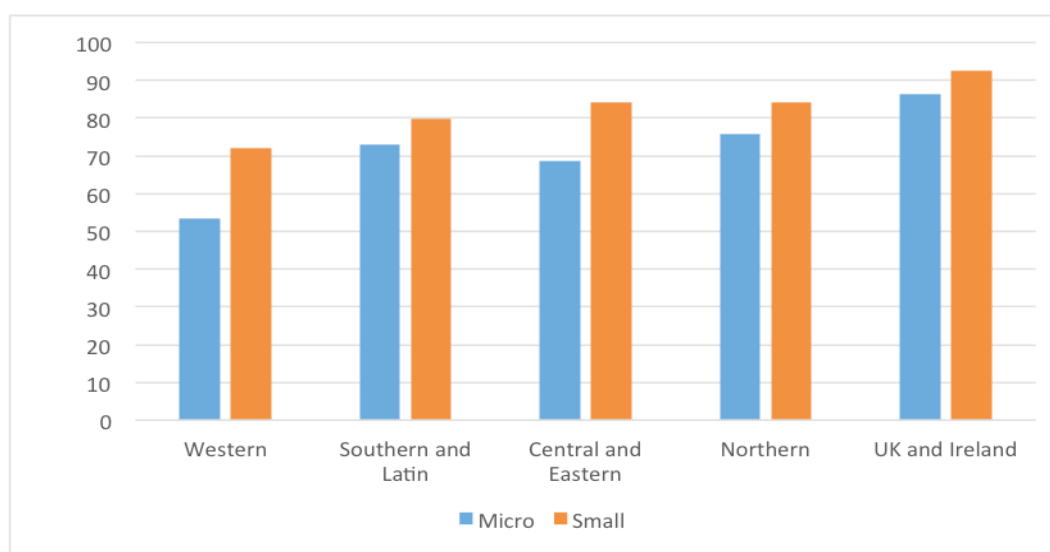
The original use by EU-OSHA (2013) of the Member State clusters outlined above was in a follow-up study that sought to explain some of the national variations in OSH arrangements at establishment level that were seen in the analysis of ESENER-1 data. Its hypothesis was that such differences might be associated with those of the national contexts in which regulated self-regulation of OSH management had been introduced in different Member States. Its analysis showed that, even after controlling for variables such as size and sector, national differences persisted in the extent of various measures of the implementation and operation of OSH arrangements, suggesting that, indeed, these features of national context were significant influences. This general finding was further borne out in a series of papers analysing these contexts within several different EU Member States, including Cyprus (Boustras and Economides, 2014), Latvia (Woolfson and Vanadzins, 2014), Spain (Garcia and Benavides, 2014), Sweden (Frick, 2014) and the United Kingdom (Wadsworth and Walters, 2014). In all cases, researchers found that the interplay of economic, regulatory and labour relations styles and structures within EU Member States helped to determine the nature of the systems that governed and supported the OSH in place in these countries, which in turn were prominent in influencing the extent of the uptake of supranational measures on OSH management arrangements within establishments. They argued that, while the nature of productive activity with which the firm is engaged, its economic position and its business and customer relationships are all important in determining the arrangements it makes to manage OSH, also among the influences of these practices in enterprises are a number of other institutional factors within workplaces — such as the presence of organised workers and arrangements for their representation, and the presence of competent advice on OSH matters employed by the firm, as well as the provision for OSH competency and leadership within the establishment. These determinants are themselves subject to a range of further institutional influences external to the establishment — such as regulatory surveillance, judicial systems (including differences between those based on common law and Roman law — where arguably the former are more amenable to adapting to a goal-based approach than the more codified systems of the latter), trade union organisations, insurance associations, the nature of professional support and the role of employers’ associations, trade associations and the like — all of which vary by country but act in concert to determine the will and capacities of employers and managers to respond to regulatory requirements and achieve good practice in their arrangements for health and safety at work.

Clearly, there remain substantial differences among EU Member States in the institutional composition and operational processes of national health and safety systems, even after the harmonising effects of the EU on regulation itself. It would be surprising if these differences had no impact upon the ways in which the ‘regulated self-regulation’ of health and safety worked within establishments situated in different Member States. Just to mention a few examples, there are major differences in the operational determinants of OSH practices between those countries, such as Germany and France, in which social insurance has helped to create a no-fault approach to compensation systems and those, such as the United Kingdom and Ireland, in which private litigation plays a dominant role. There are differences in the relationship between systems for health and safety and those for public medicine and health care that are determined by the different historical trajectories of socialised medicine and public health provision between countries in the EU. And among other things related to these differences are those determining the role of professional practice and its institutions in preventive approaches to OSH. There are further influential differences — found in the historical composition of the economy, the role of nationalised industries, large organisations and public/private sector compositions, and the role of differences in institutional approaches to social dialogue — that all impact on arrangements for OSH. All of these (and many more) features of the economic, political, regulatory and labour relations systems in which arrangements for the governance of OSH are embedded are likely to impact upon the operation of practices at the establishment level.

This is the case regardless of firm size — although firm size may be a significant factor in influencing the response to such determinants. Therefore, in the present study, we postulated that this influence of national context would also be a significant reason for variations between Member States in the presence and quality of arrangements for OSH in micro and small firms. And, indeed, our secondary analysis of ESENER-2 data would seem to bear out this assumption.

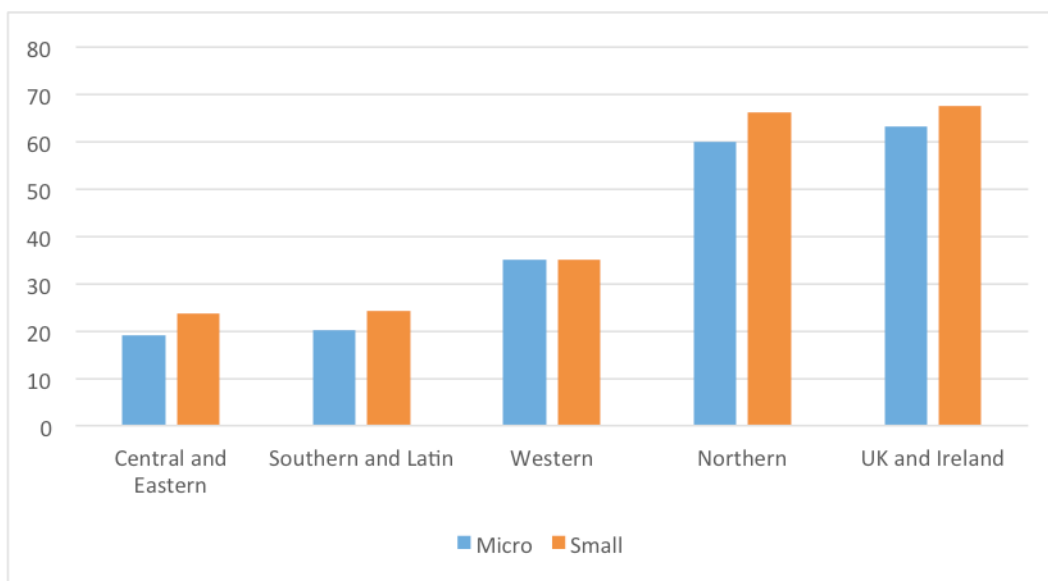
Looking at several of the features of OSH arrangements in MSEs reported in the previous section, we see differences between our clusters of Member States. For example, on risk assessment, the analysis demonstrates that, while there are not huge differences in the proportions of MSEs that claim to carry out workplace risks assessments, those in the United Kingdom and Ireland and the Nordic countries do so with slightly greater frequency than elsewhere (Figure 4.13). But, when asked who undertakes such risk assessments, the differences are considerably more substantial, with the Nordic countries and the United Kingdom and Ireland clearly separated as Member States in which the largest proportions of micro and small firms undertake their own workplace risk assessments (Figure 4.14).

**Figure 4.13: Proportion (%) of enterprises reporting that they carry out regular risk assessments, among MSEs, by country group, EU-28**



**Source:** ESENER-2, EU-OSHA

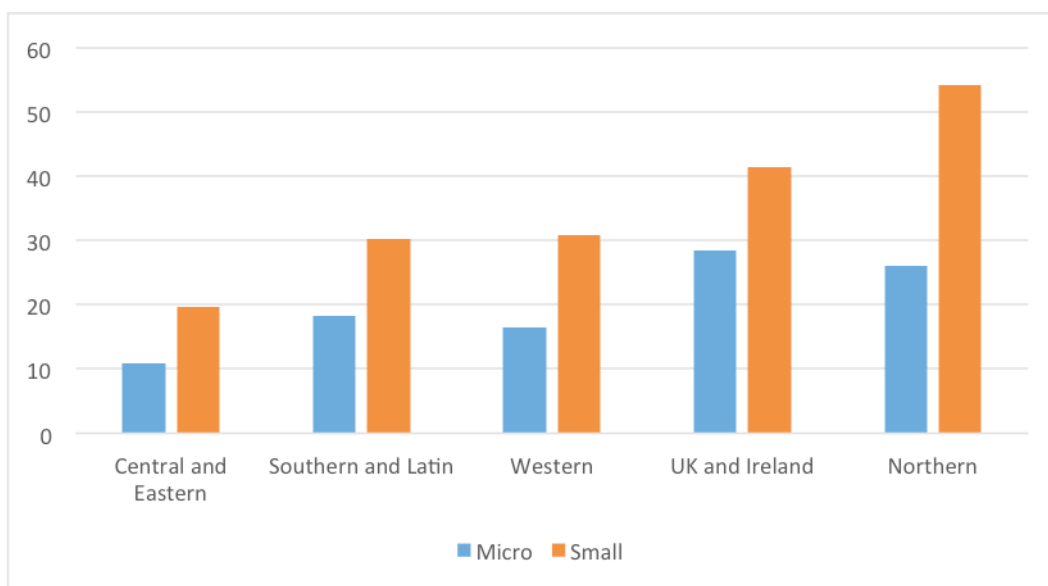
**Figure 4.14: Proportion (%) of enterprises reporting that risk assessments are mainly carried out by internal staff,<sup>31</sup> among MSEs, by country group, EU-28**



Source: ESENER-2, EU-OSHA

Similar patterns are evident in the secondary analysis undertaken using composite measures of high management commitment and high worker participation, which were associated with strong presence of OSH arrangements in MSEs, as is shown in Figure 4.15.

**Figure 4.15: Proportion (%) of enterprises reporting the combination of high management commitment and high worker participation, among MSEs, by country group, EU-28**



Source: ESENER-2, EU-OSHA

<sup>31</sup> This is the proportion of *all* enterprises, not just those that report carrying out risk assessments.



Here, as Figure 4.15 shows, we see broadly similar differences between the country clusters, with once again the Nordic countries and the United Kingdom and Ireland with the strongest showing and, as was the case with in-house risk assessment, the Central and Eastern European country cluster with the weakest performance. And again the differences we might anticipate occurring between micro and small firms are apparent. As we have also mentioned elsewhere, one obvious explanation for these differences lies in the origins and duration of the experience of process regulation. As we previously observed, the Nordic countries and the United Kingdom began moves in this direction as early as the 1960s and 1970s; many other EU Member States underwent major reforms in this respect much later, brought about by the implementation of EU Framework Directive 89/391 during the 1990s. Those in Eastern European countries waited even longer until they reformed regulatory provisions in line with requirements for accession to the EU, doing so in the early years of the present century. The dominant discourse on regulated self-regulation, therefore, has come quite late to many EU Member States. However, as we also point out elsewhere, the age of transposition and implementation of regulatory measures emphasising the *management* of health and safety, as opposed to those prescribing or specifying standards to be achieved in the workplace, is a somewhat simplistic explanation that we think places too much significance on the power of regulation and fails to account for the underlying determinants responsible for both the regulation itself and the predisposition to make its provisions operational. These determinants have seldom been the subject of serious or sustained research in OSH, whether in relation to small or larger workplaces, and this review has identified only limited literature. This represents a significant gap in current knowledge, on which more detailed and nationally comparative research could shed further light. We will return to this discussion in the following chapter and in the conclusions to this report.

### 4.3 Conclusions

Seeking to achieve a better understanding of the reasons behind the comparatively poor health and safety performance of MSEs demonstrated in Chapter 3, this chapter has reviewed the available research literature concerned with providing explanations for the data on OSH outcomes. At the same time, it has undertaken a secondary analysis of data from the recent ESENER-2, which confirmed that OSH arrangements are far less well developed in smaller enterprises than in their larger counterparts. The literature reviewed not only involved the burgeoning literature on health and safety arrangements in small and micro firms, but also drew selectively from relevant areas of research concerning the social and economic relations of work within them, as well as from recent regulatory and socio-legal research. We have discussed several related explanations for the practices observed in MSEs that have emerged from these disparate sources and some common themes have emerged. They can be briefly summarised.

In short, there is widespread agreement in the OSH research literature that arrangements for OSH in many MSEs are weak and underdeveloped in relation to what is regarded as the 'preferred model' for enterprise OSH arrangements by both regulation and professional practice — and this contributes to the poor OSH outcomes observed in these enterprises. Numerous studies reported in the OSH research on practice in MSEs and the understanding of their owner-managers have identified reasons for the poor uptake of arrangements for managing OSH in these enterprises. They include the economic position of many MSEs and the low investment they are able to make in OSH infrastructure; the knowledge, awareness and competence of their owner-managers in relation to both OSH and its regulatory requirements; their limited capacity to manage their affairs systematically; their attitudes and priorities, given the limited resources at their disposal and their concerns for the survival of their business; and the combination of all these weaknesses with the substantial proportions of such firms that are found in hazardous industries.

Turning to comparative findings by Member State, we have found some differences in the presence of arrangements for health and safety in MSEs between countries. Very broadly (and with some exceptions), the ESENER-2 analysis suggests that countries with longer-standing legislative and policy approaches to process-based regulation (such as those in the Northern European and United Kingdom and Ireland clusters) may fare better in terms of the presence of workplace arrangements reflecting their requirements than those in which these developments are more recent in origin. This pattern is the same



in MSEs as it is for enterprises overall. However, we recognise that this is a significant oversimplification that does not reveal the nature of possible underlying determinants of these differences. The research literature is relatively silent on these matters, and comparative studies that have been attempted readily acknowledge their limitations in this respect. To explore the presence and effects of such possible underlying determinants and their variation by Member State requires greater empirical study than has been undertaken to date.

It is important to recognise — as indeed some of the studies in the literature do — that among the determinants of OSH arrangements are a number of issues of context and environment that either originate outside the workplaces they affect or are part of other elements of the social and economic relations of work in these enterprises. While we have been unable to discover significant literature on the comparative effects of such wider determinants between countries, there is literature that considers some of these influences within the national contexts in which they apply. We will consider the findings of this research literature in the next chapter, where we review relevant elements of research on the experience of work in small and micro firms and, in particular, those helping to explain the ‘structures of vulnerability’ with which Nichols (1997) has argued it is characterised in a large proportion of these firms. We do so by considering, first, labour relations perspectives and then by considering the understanding in the research and academic literature concerning the influence of governance and regulation on the experience of work and the working environment in small and micro firms. We thus aim to go beyond the understanding of the key role played by owner-managers in determining arrangements and outcomes — on which we have focused in the present chapter — and, in the words of Joan Eakin (2010), ‘have regard to the workers’ standpoint’ and ‘focus upstream’ in order to develop our analysis of the determinants of practice and outcomes on OSH in MSEs. It is therefore to these experiences and their contexts that we turn to next.

## 5 Labour relations and regulatory perspectives on OSH in MSEs

While there is not a large amount of literature specifically concerning the social and economic relations of health and safety in small and micro firms, analysis from such sources has argued that work in these enterprises is often subject to a ‘general and multifaceted lack of resources’ that give rise to a set of social and economic ‘structures of vulnerability’ (Nichols, 1997:154). These factors make it less likely that owners and managers will have the capacity or will to put in place arrangements to manage workplace risks in the same ways as in larger firms, and that workers and their organisations will have the necessary labour market power or labour relations influence to pressurise them to do so. The situation encompassed by Nichols’ term included the combined effects of limited resources, in which often poor or inadequate hardware, limited managerial skills, limited education and training experience, weak trade union representation, and poor job security and opportunities, in combination with limited visibility to regulatory inspection, act in concert to increase risks of poor health and safety outcomes. The contents of Chapter 2, as well as that of the previous chapter, provide strong empirical evidence that this is still the case.

The present chapter seeks to explore these issues further, with a focus on two elements that are relatively understudied in the research literature focusing specifically on OSH in MSEs. The first concerns the experiences of workers in MSEs while the second explores the implications of work in MSEs for the regulatory protection and surveillance of workers’ health and safety.

### 5.1 The experience of workers

Wider social, economic, regulatory and labour relations issues implicated in the creation of such structures of vulnerability are identified in the literature focusing on health and safety (see, for example, Walters, 2001, 2002, 2008; Champoux and Brun, 2003; Eakin et al, 2010; Micheli and Cagno, 2010; Hasle et al, 2012a; Bejan et al, 2013; Legg et al, 2015:191). More detailed understanding of them can be found in the literature on the social and economic relations of work. Elements of the wider perspective found in these latter sources are, therefore, helpful in understanding the determinants of experiences of health and safety in MSEs.

As our interest lies in the consequences of work in MSEs for workers’ health and safety, it follows that research exploring how workers experience their work in this respect and in these firms would be a logical focus for review. However, as we have already noted, in the OSH research there is relatively little study of workers’ experiences of health and safety in small and micro firms, which usually foregrounds the interests and roles of owners and managers. It is either silent on the possible differences in the interests of workers or assumes their interests are subsumed within those of the enterprise — which are further assumed to be the same as those of the employer-manager.<sup>32</sup> This is not new — the absence of a focus on workers in research on small firms was acknowledged a long time ago. For example, writing some 25 years ago, James Curran (1990:139) noted that literature on small firms in the 1970s and 1980s lacked reference to ‘real people in real enterprises’. Since that time, wider social and economic research has broadened its interest to pay more attention to workers’ experiences, but that on OSH remains largely bounded by its focus on owner-managers.

As Eakin (2010) has persuasively argued, the *experience* of these individuals is not necessarily the same as that of their workers and nor are the contexts in which it occurs. Assumptions about commonality in this respect are therefore suspect. Eakin draws attention to this in a number of different ways. She argues that the terminology used in research on OSH in MSEs itself connotes a particular framing:

<sup>32</sup> For example, in an article investigating the role of corporate social responsibility in influencing OSH strategies, Granerud (2011) states: ‘Owing to the key role of the owner-manager within small firms, the present article does not distinguish between interests of the manager and those of the enterprise....’ This assumption that it is unnecessary to distinguish between the interests of the owner and the enterprise or (implicitly) the workers employed there is fundamentally at odds with the basic tenets of the literature addressing the social and economic relations of production.

*Typically, 'small business' ... homogenises a (diverse) field. Most significant ... is the tendency to talk about 'small business' as though it were a single unitary entity; as though employers, workers and the company itself were one and the same. More precisely, the term 'small business' is often implicitly equated with management.... It is assumed, of course, that there are workers in small enterprises, but they are largely absent in the concepts and discourse of the field in general....*

Writing on small and micro enterprises in the wider social and economic sciences has repeatedly argued against such homogenising effects and the oversimplifications they create, and demonstrated a number of important and often paradoxical situations inhabited by workers in small firms which are relevant to understanding their experience of health and safety. Referring to examples from her own research (Eakin, 1992; Eakin and MacEachen, 1998; Eakin et al, 2003), Eakin (2010) argues that workers' perceptions of, and responses to, issues of health and injury are closely tied to the social relations of the production in which they are embedded. She suggests there are two features of these relations that have particular consequences in small workplace settings: personal relations of work, and the social proximity of labour and management. When working 'normally', these features make for a supportive and central feature of workers' experience, and she notes they were often cited by the workers in her studies as the reasons for job satisfaction and a sense of shared interest with that of management and the enterprise generally. This is also a common finding in other studies of work in small firms (see, for example, Edwards et al, 2004; Forth et al, 2006; Tsai et al, 2007), in which it is seen as distinguishing such work from the more impersonal experience of that in larger organisations.

Eakin argues that such social relations between workers and employers may also be fostered by the oftentimes common social class background of small business employers and workers, by their physical proximity in the workplace and by business necessity. Again, longstanding findings from wider research into the social relations of work in small firms are broadly in keeping with these observations, with other work indicating that not only social class, but also family and ethnic origins play important roles in fostering the social relations in small and micro enterprises (see, for example, Ram, 1994; Ram and Jones, 1998; Razin and Light, 1998; Ram et al, 2001a, b). However, it is important to note that for several decades research has also indicated that these relations do not follow simplistic stereotypes. For example, as early as the 1970s, British research questioned the prevailing view that relations between workers and their employers in small firms were mutually satisfying and conflict free (Curran and Stanworth, 1979). Further early work demonstrated that the notion that workers in small firms always behaved in ways that were compatible with the interests of their employers was an overly simplistic and misleading interpretation. It revealed instead strong evidence that the processes through which labour–capital relations were constituted in these workplaces were often complex and contradictory (Goss, 1988; Ram, 1991).

Returning to Eakin's observations, she found that these same two features of social relations and proximity were important in determining the ways work-related illness and injury were likely to be experienced by workers in small enterprises. In situations where labour relations were generally good, the workers she studied did not attach particular concerns to issues of health and safety. They tended to share the employers' view that their safety was their own responsibility and they saw their injuries as 'part of the job', echoing the classic analysis of Nichols and Armstrong (1973) concerning workers' views on safety issues in a large manufacturing plant (see below). In contrast, however, she found that, in workplaces with strained labour relations, illness or injury served to elicit a discourse of blame, in which workers held their employers to be at fault. Her studies suggested that in these situations the attribution of injury or health problems to work functioned in ways that made workers aware of, or accentuated, their perception of the inherent conflict between their own interests and those of the company. She concludes (2010):

*From a worker's standpoint, illness or injury can undermine the sense of being treated 'like a person', and reconstitute him/her as merely a unit of labour power.... By triggering a questioning of formerly taken-for-granted understandings of the employment relationship, and by unmasking the potential conflict inherent in the management–labour relationship, work injury has effects that go far beyond individual workers' bodies.*

Reflecting on these findings in the light of the classic analysis of Nichols and Armstrong is also revealing. Contesting the ‘identity of interest’ on health and safety matters assumed by the Robens Report (1972) and its conclusion that the major cause of injury at work was ‘apathy’, Nichols and Armstrong analysed workers’ testimonies concerning accidents that had taken place in the workshop in which they were employed, which was situated within a larger establishment. They showed that the reasons for the injuries they investigated were to be found not solely in the acknowledged unsafe acts that were their immediate cause, but also in the wider relations of production within which they occurred. Each accident had taken place when the victim and others had been trying to rectify faults that had interfered with the production process. They had done so by breaching safety rules, not because they were ignorant of the rules, apathetic or unconcerned about their safety, but because their actions were determined by stronger imperatives concerning production and profitability, which were prioritised by the company management in the ethos of social relations among managers and workers alike. Among workers who, like those in small firms, saw safety as a matter of personal responsibility, their actions to ensure the continuity of production were seen, therefore, as more important and placed before those addressing personal safety, even in scenarios in which company rules theoretically required adherence to company standards on safe behaviour.

As Eakin points out, such imperatives are often seen in many small and micro firms where, in the dominant culture prevailing in these enterprises, they are driven by a combination of ignorance and the economic survival strategies of owner-managers with which workers are complicit. As the work we have reviewed in earlier chapters makes clear, this is especially the case in small firms pursuing ‘low road’ survival strategies in weak and vulnerable positions at the end of supply chains. Bearing in mind that sectors such as agriculture, construction, catering and private services (traditionally regarded as sectors in which physical hazards lead to disproportionately poor health and safety outcomes)<sup>33</sup> are dominated by the presence of such ‘low road’ MSEs, the increased vulnerabilities of workers in these small and micro firms becomes apparent. But it is not just in such ‘high risk’ sectors that the conditions in MSEs might contribute to heightening risks, for the argument of the literature is that the dominant culture described above is likely to lead to greater vulnerability to harm elsewhere too. Findings from the related literature on the restructuring of work and its OSH consequences are also relevant here (for reviews, see Quinlan et al, 2001; Quinlan and Bohle, 2008; Di Nunzio et al, 2009; Weil, 2014), for these firms are often situated at the ends of outsourced chains created by restructuring, which, as this literature demonstrates, further increases the vulnerability of workers. This literature emphasises the increased precariousness of work as among the effects of its restructuring and reorganising, and is further helpful in understanding more of the *processes* that affect the OSH experiences of workers in small and micro firms — for example, where outsourcing and supply chain relations may entail the sacrifice of OSH because of price and delivery pressures, and so on (see Walters and James, 2009; Walters et al, 2011).<sup>34</sup>

Other wider research on social and economic relations in small firms lends further support to this analysis. For example, Edwards and Ram (2006) show how these enterprises and their owner-managers are embedded in networks and shaped by social institutions in ways that vary according to different types of firm, and how the interplay between such external influences and internal resources shape and help determine the extent of ‘workers’ voice’ evident in labour relations within such small and micro firms. Further work indicates that, while close working relations between workers and owner-managers exist in small firms and such relations lead to a degree of pragmatic satisfaction among workers, they do not necessarily produce high levels of affective commitment (Tsai et al, 2007). These close relations also lead in some cases (although not necessarily the majority) to conflict — especially when there is pressure on the firm from outside (Barret and Rainnie, 2002). The extent of employment security provided for workers in such enterprises and the distribution of power within them render them vulnerable to abuse and exploitation — one view of employment relations in small firms that is well established in the wider labour relations literature (see especially Rainnie, 1989). This thesis can be criticised for being somewhat simplistic in its view of the prevalence of harsh management systems, as well as for being overly deterministic, failing to pay sufficient attention to the complex, informal and often

<sup>33</sup> This is not to say that other sectors do not also have significant risks, especially in relation to ergonomic and psychosocial conditions.

<sup>34</sup> It is also important to note that the same authors also point to a converse scenario and identify factors that may allow these business relations and the processes they engender to be used in ways that support OSH (Walters and James, 2011).

contradictory nature of workplace relations (Ram, 1991; Atkinson, 2008) and overstating the extent to which work in small firms is controlled by the external environment (Gray and Stanworth, 1991). Nevertheless, it remains an analysis that is more relevant to the health and safety experiences of workers in many 'low road firms' than the identification of their interests with those of owner-managers, which characterises much of the OSH literature.

Generally, it is well established in the labour relations literature that formal arrangements for labour relations are most weakly developed in smaller enterprises. Unionisation is weak, in terms of both representation and membership. The prerequisites identified in research on the effectiveness of representative worker participation in achieving good health and safety management practice are, therefore, usually barely present in these firms and, consequently, the role of representation in influencing health and safety arrangements is limited.<sup>35</sup> Further research shows there are tensions between stated rules and procedures and a marked tendency for owners and managers in many MSEs to override these systems as they see fit (Cox, 2005). There is also considerable evidence that requirements of national labour laws and policies on arrangements for labour standards and labour relations have far less impact within small and micro firms than in their larger counterparts (see, for example, Ram et al, 2001b; Edwards et al, 2004) — an observation that also helps contextualise poor implementation of health and safety regulations in these enterprises. Many of these findings are confirmed in the recent survey report on social dialogue in small firms conducted by Eurofound (2014), which notes that employee representation is limited in small and micro firms, but is often somewhat more prevalent if such establishments belong to a larger company or group. It suggests there are cases of sector-level encouragement of partnership or participatory-based initiatives (for example, in construction), but on the whole the survey confirms that the presence of collective bargaining, company agreements and representation structures increases with the size of the company. It concludes that it is difficult to map the general patterns of quality of social dialogue in micro and small companies, arguing that a considerable number of such companies operate outside established models of participation. Although the survey indicates that OSH is one of the most important issues of social dialogue in micro and small companies, it also concludes that such companies frequently have less knowledge and fewer resources to deal with OSH than their larger counterparts and that there is less knowledge of the role of OSH representatives in these companies.

A further area of investigation that has burgeoned recently concerns the role of family and ethnic relations in the survival of 'low road' micro and small firms, and research has demonstrated how such survival reflects the continued supply of labour through kinship networks and the ability of these firms to respond actively to product market opportunities (Simon and Hitt, 2003; Edwards and Ram, 2006). But it is also the case that this research literature points to the disproportionate amount of exploitation of labour and poor working conditions experienced among ethnic minority workers employed in micro and small firms in many sectors (for example, Vickers et al, 2003; McKay, 2006; Ahonen et al, 2007).

Throughout the wider social science literature on small firms, discussion has continued concerning what constitutes the effects of size and what are effects of other variables such as sector, investment, structure and business position on the experience of work in these firms — much in the same way as a similar continuity can be observed in the studies reviewed in Chapter 3 concerning the effects of size on occupational injury. Such discussions have separately concluded that an appreciation of the heterogeneity of small and micro firms is paramount in gaining a proper understanding of the range of experience of working conditions within them. As Baldock et al (2006) note, debates on employment relations and labour management in small firms emphasise size as a contingent rather than a determining factor (Barrett and Rainnie, 2002; Marlow, 2003; Ram and Edwards, 2003). As with OSH, important influences are also exerted by sector and market contexts, the organisational capabilities of the business and characteristics associated with owner-managers such as awareness, education and management experience. It is widely agreed that, while they may differ from large firms in many of these respects, the social and economic determinants of working conditions and employment relationships

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<sup>35</sup> One exception to this general situation is possibly that of the system for representing workers' interests in health and safety in small firms in Sweden through the work of regional health and safety representatives. However, it is important to bear in mind that the unusually high trade union density in small firms in Sweden is a significant factor in the support of this system (Frick and Walters, 1998; Frick, 2009). Such high trade union density is rarely present in small firms elsewhere in Europe, and similar schemes introduced elsewhere have achieved considerably less impact (Walters, 2002).



within MSEs reflect their heterogeneity, giving good reason to take care to avoid ‘one size fits all’ explanatory frameworks and to seek a more nuanced understanding of the actors and processes within small firm employment relationships.

Nevertheless, from the evidence already presented in this review, it is clear that many poor-quality jobs *are* clustered among these enterprises. Moreover, their associated poorer experiences of working conditions and work environment outlined in Chapters 2 and 3 can, to some extent, be explained by the experience of employment insecurity, the absence of autonomous workers’ voice, vulnerable employees and precarious work that are all especially concentrated in smaller establishments. When the elevated risk identified in quantitative data to be present in these enterprises is added to this profile, the consequences of Nichols’ (1997) ‘structures of vulnerability’ become evident and help explain findings concerning the relatively poor implementation of health and safety procedures among these enterprises overall that concluded the profile presented in the previous chapter, and lead to the outcomes for workers that were detailed in Chapter 3. Such findings raise questions concerning the role of the regulation of risk in such enterprises, and it is to this subject that we turn in the following section.

## 5.2 The role of governance and regulation — limits of the conventional model

There are few robust studies of the impact of regulation or regulatory inspection on OSH practices in small and micro firms and it is striking how little solid empirical evidence there is. A recent paper by MacEachen et al (2016) comments that ‘a noticeable gap in the OSH regulation qualitative research literature is a focus on small businesses’, and this is the case, despite the longstanding observation that small business response to regulation may be different to that of larger firms (see Genn, 1993). The available literature indicates a paradox. On the one hand, as we have already indicated, it demonstrates a high level of avoidance and lack of awareness among owner-managers in MSEs concerning regulation and its requirements. On the other, reviews of the international literature concerning influences on the management of health and safety in small firms generally agree that regulatory requirements, their inspection and the threat of enforcement action have a significant impact on the behaviour of duty-holders in small firms (Davis, 2004; Wright et al, 2004, 2005; Baldock et al, 2006; Levine et al, 2012). Indeed, Baldock et al (2006) conclude that ‘...among the various influences on small firms, inspections on the part of regulatory agents are the most important influence, although [they also acknowledge] there is some scope for more innovative approaches to encouraging compliance-related improvements’. However, this broad finding masks the obvious problem that, while face-to-face contact with regulatory agents may be a substantial influence, achieving this on anything like a significant level is an enormous challenge. Indeed, scrutiny of the practice and possibilities of regulation and regulatory agency influence on MSEs reveals a complex reality, indicating that the role of governance and regulation in securing improved OSH practice in small and micro firms is not straightforward.

There are a number of studies suggesting that small firms possess an antipathy to state intervention on OSH in the form of regulation and regulatory inspection (Nichols, 1997; Wright, 1998; Walters, 2001, chapters 3 and 5). This is sometimes seen as an aspect of the general suspicion with which any form of intervention in the running of their affairs is viewed. In addition, and more generally, the amount of illegal work and workers in the small enterprise sector and the disproportionate representation of disadvantaged groups involved in such activities are further seen to contribute to the likely absence of a culture of risk awareness and concern for health and safety (Walters, 2002:36). A study of hairdressers, for example, found that the owner-managers of such businesses often found it difficult to translate the requirements of the legislation to their own business environments and held a different conception of what compliance entailed to that of regulatory officials (Fairman and Yapp, 2005). Studies that have examined differences in how small firms respond to statutory health and safety requirements and their surveillance have found a variety of different behaviours.

In an influential account based on their study of over a thousand small businesses in the United Kingdom, Vickers et al (2006) advanced a typology highlighting the main ways in which firms differ in terms of their orientation to health and safety regulation and the varying motivational factors and circumstances which underpin these differences. They distinguished four broad categories: (1)

avoiders/outside, (2) reactors, including the subcategories of (a) minimalists and (b) positive responders, and (3) proactive learners. The first of these four categories included enterprises with limited awareness of statutory requirements that were likely to be ephemeral and/or transient, of a low profile and non-compliant with other areas of legislation, minimising short-term costs and contact with officialdom. Employment conditions in these firms were likely to be poor generally and the workforce unqualified, low skilled, insecure and vulnerable to exploitation. Vickers et al suggested that many micro/smaller enterprises and self-employed contractors fell into this category due to their 'low visibility' and limited exposure to positive external pressures, regulatory or otherwise. Their second category included the majority of small businesses, and they further subdivided it into minimalists and positive responders. The former, they suggested, exhibited limited or non-existent awareness of regulatory requirements, viewed regulations as unnecessary burdens and were wary of officialdom, although they may be exposed to both by being more established than those in category (1). Employers in these firms also tried to limit short-term costs when faced with highly competitive market conditions and displayed a propensity to employ 'short cuts' and/or dishonest measures. Health and safety would be typically viewed by the owner-manager of such firms as a 'common sense' matter and largely the responsibility of individual employees. Employment conditions were likely to be poor to average and the workforce typically unqualified and/or unskilled. Such businesses responded to regulators under compulsion.

The positive responders, in the other sub-category of this division, possessed some awareness of regulation, often obtained from external agencies such as inspectors and customers, and were more responsive to intervention, although requiring clear guidelines. They saw regulation as more legitimate, not least because of its role in controlling unfair competition, were concerned with protecting/retaining staff and believed that good health and safety practice was synergistically related to good housekeeping, 'common sense' and/or customer care. Such businesses were likely to be found in niche market contexts and were, therefore, less subject to intensive competition on cost, and might also be subject to the requirements of large customers. Working conditions in general were better in these enterprises than in the case of the two previous categories. Employees were also more likely to be skilled and qualified and have greater bargaining power and/or be more highly valued by owner-managers for reasons associated with the close nature of working relationships and/or patriarchal care and concern for employees.

In the third main category of their typology — the proactive learners — Vickers et al placed businesses that demonstrated a relatively good awareness of legislative requirements, in which policy and good practice were embedded in organisational routines. They would typically treat regulatory interventions as opportunities for learning and improvement, exhibiting the most positive attitudes and responses to regulators and even using inspectors as 'free consultancy'. Such businesses were typically of a higher profile than those in the previous categories and more likely to accept that compliance offered benefits to the business, and also had the ability to invest in staff development, new equipment and other protective measures. There was also likely to be workforce involvement and representation in these firms. Prior experience of an incident related to health and safety and the associated costs, and the desire to avoid any further such incidents, was also a motivating factor. They were likely to operate in niche markets where quality, innovation and responsiveness to customers were important, to have ongoing/long-term relationships and to have a workforce that included highly qualified and/or skilled staff. Vickers et al suggested that it was this group in which businesses that were most likely to be able to effectively self-regulate were most often found.

The Vickers et al typology resonates with the descriptions of small firms outlined in Chapter 2 of this report, in which it will be recalled that those — firms with 'low road survival strategies' were likely to be among those that were most impervious to the influence of either public regulation or the private regulatory influences of the market and business relations in which they were embedded. It is in these firms, of course, where the 'multifaceted lack of resources' referred to in the previous section are most likely to render workers vulnerable to harm. The typology is also useful because it helps profile what are likely to be preconditions for positive responses to both public and private regulation and serves as a reminder that regulatory strategies are likely to require adaptation to the circumstances of the companies to which they are applied. This in turn helps explain why it is that, although research on regulation demonstrates good reasons to think that poor OSH practices in MSEs can be improved by regulatory intervention, there are a host of questions concerning its role and relevance in improving OSH arrangements in MSEs. Other studies, such as those in relation to occupational sector (see Sczesny et



al, 2014 (in Germany); Grabe, 1991 (comparative inspection practice between the United Kingdom and Germany)), highlight similar findings for small firms.

The sheer number of enterprises in question and their diversity, visibility and accessibility present huge challenges for both conventional regulation and the agencies charged with monitoring and promoting compliance with regulatory standards. In this respect, for example, the likelihood of face-to-face encounters between inspectors and owner-managers is very limited indeed. In the United Kingdom, for example, the Factory Inspectorate was estimated, even at its high point in history, to carry out a general inspection of each workplace within its ambit 'at least once every four years' (Robens, 1972:61). By 2009, it was estimated that this rate had plummeted to once every 38.4 years (Hazards Magazine, 2010, quoted in Tombs and Whyte, 2013), and this was for all enterprises regardless of size. A similar trajectory of decline is seen in other EU countries. For example, in Sweden, the resources of the Work Environment Authority were dramatically reduced following a change of government in the first decade of the present millennium. Even before this, the ratio of inspectors to workers (70 inspectors per million workers) had fallen to the lowest levels since the reforms of the 1970s, and it is currently estimated that only 5% of workplaces are likely to receive a visit from an inspector in any one year (Frick, 2009; Walters et al, 2011). In France figures indicate few inspections and fewer prosecutions in recent years (Thébaud-Mony, 2011). In several other EU Member States, such as Germany, the Netherlands, Greece and elsewhere, there is similar evidence of decline in the number of inspectors, inspections and enforcement actions (Cardiff University et al, 2011). Bearing in mind that larger firms are inspected far more frequently than their smaller counterparts, the inescapable conclusion is that, despite its merits in terms of achieving preventive actions on OSH, face-to-face contact between owner-managers of MSEs and inspectors is unlikely to ever be the experience of the vast majority of MSEs in the United Kingdom. While the ratio of inspectors to establishments varies considerably between EU Member States, and many have more favourable ratios than is the case for the United Kingdom, nowhere are there sufficient numbers of inspectors to make regular face-to-face contact with owner-managers a serious prospect.

It is widely held that additional strategies are, therefore, necessary. This has been acknowledged for some time by many regulatory agencies in the Member States of the EU (and by labour inspection generally). For example, in his introduction to Von Richthofen's (2002) book on labour inspection, published by the International Labour Organization (ILO) nearly 15 years ago, Jukka Takala pointed out 'a broader reflection on the changing role of labour inspection systems and services in the twenty-first century' was required to address the changing structure and organisation of work. Among the consequences of the changes to which he referred was the growth in smaller units of employment. A review of responses of regulatory agencies to these challenges undertaken for the European Commission in 2011 indicated that regulatory agencies had taken action at several different levels in a number of countries (Cardiff University et al, 2011). In some countries, such as the United Kingdom, the Nordic states and the Netherlands, which were in the vanguard of the early reforms introducing process-based regulation in OSH, there has been a highly developed policy discourse on these matters driven by the regulatory authorities for OSH and their state departments for the past two decades or more. This policy discourse is either less evident or more recent in other countries; however, the influences on regulatory agency approaches include broadly similar actions:

1. *Organisational and policy responses*, including moves towards a greater role for strategic coordination, stimulation and promotional activities aimed at increasing reach and 'buy-in' from owners and managers of MSEs and their organisations to improve management of risks; greater focus on advice and guidance and the means of cascading messages to better connect with 'hard to reach' duty-holders such as the owners and managers of MSEs; and support for the greater involvement in work environment issues by labour market actors and other interest groups including closer relations with groups representing the interests of 'vulnerable' workers, community groups, agricultural interests, etc.
2. *Inspection responses and enforcement activities* in relation to the business environment of MSEs, such as going upstream in inspection/supervision of supply chains; increased supervision of multi-employer worksites where many MSEs are present; broadened surveillance of legal responsibilities among fragmented and/or multi-employer arrangements, especially in

sectors such as construction; and simple systems for inspecting and publicly rating companies with, for example, the use of ‘smileys’ such as in Denmark.<sup>36</sup>

3. *Organisational support for inspectors*, including placing more emphasis on training provision for labour inspectors on how to deliver the above strategies, and better data collection through cooperation with other stakeholders.

Specific examples of each of these approaches drawn from national experiences in selected EU Member States were outlined in the report for the European Commission (Cardiff University et al, 2011). Using various combinations of these approaches, regulatory inspectorates have thus sought to take advantage of the position and interests of organisations, individuals and processes to increase engagement and ‘ownership’ of OSH among them and the duty-holders in MSEs thought to be influenced by them. They are embedded in both the practice of regulatory inspection and the wider strategies of governance of OSH observed in some EU Member States. Their purpose is to combine the overlapping aims both of leading and increasing ‘buy-in’ amongst traditional actors and their organisations and of extending its reach to a range of further organisations, individuals and processes that are in intermediary positions between the regulatory agencies and the small and micro firms widely accepted to be beyond the reach of conventional inspection (see also the similar observation made earlier and more generically by Eakin et al, 2000). They also address the call for ‘going upstream’ with regulatory interventions, focusing on supply chain relationships and responsibilities, and so on. However, while these findings indicate a level of awareness on the part of some regulatory authorities concerning the need for a wide range of approaches, the report also makes clear that at the time of its inquiry there was little systematic empirical information available on the scale or extent to which these approaches were adopted and practised by inspectorates in the EU and even less information concerning their evaluation. There was therefore little evidence available concerning their effectiveness (Cardiff University et al, 2011).

However, the problem of regulating OSH arrangements in MSEs is not only one of regulatory surveillance, as, while this is challenging enough, what constitute appropriate regulatory standards for smaller enterprises is also problematic. As we have previously noted, regulation on OSH has undergone a fundamental change in recent decades. There has been a move away from prescriptive, specification-based standards towards more process-orientated approaches. This has been characterised by various forms of so-called ‘enforced (or regulated) self-regulation’, developed in response to perceived limitations of previous regulatory standards *in addressing challenges found in larger enterprises*. At the same time, these changes are also a response to an equally significant perception of the limitations of so-called ‘command and control regulation’ to achieve compliance. The result is that OSH regulation has become characterised by process standards for which it is acknowledged that adequate levels of competence and understanding are necessary for their proper implementation — indeed possession of, or access to, such competence is required by the statutory measures themselves.<sup>37</sup> Of course, it is precisely this capacity or the resources to access it that the typology of Vickers et al (outlined above) demonstrates to be missing among a substantial proportion of MSEs. At the same time, there is a persuasive argument that the regulatory inspection strategies necessary to monitor and support compliance with them may need to be different from those more suited to the specification standards they have replaced. However, here too there is little evidence that the introduction of appropriate surveillance strategies has been successful. As Fairman and Yapp (2005) note in both these respects:

*The rationale behind the growth of enforced self-regulation should be questioned. The vast majority of companies (SMEs) find it difficult to comply, not because they are ‘amoral calculators’ or ‘political citizens’ in Kagan and Scholz (1984) typology, merely because this regulatory tool has made them ‘organizationally incompetent’. Enforced self-regulation requires systems management, normally not a feature of small businesses. The tool designed by the regulator forces the enforcer on the ground to attempt to make sense of the requirements with small businesses. Such activity is intensive on time, something that enforcement agencies do not have.*

<sup>36</sup> See <http://arbejdstilsynet.dk/da/nyheder/presserum/smileyer.aspx>

<sup>37</sup> Article 7 of Framework Directive 89/391, for example, requires employers to either designate or enlist competent services or persons to carry out activities in relation to the prevention of occupational risks for the undertaking and/or establishment. This requirement has been transposed in various ways into the national regulation of all Member States, but most MSEs have neither the internal capacity to undertake it themselves nor the resources to commission it from external services.

*The pragmatic response of enforcers is to interpret enforced self-regulation into sets of rules for businesses to follow. Enforced self-regulation, therefore, fails to live up to two of its objectives — reducing the burden on enforcement agencies, and placing responsibility on businesses.*

While ‘enforced self-regulation’ presents major challenges for MSEs, it further needs to be acknowledged that it is no coincidence that it has evolved as the central feature of regulatory reforms over the past 30 years. As others have noted, during this time the political and economic landscapes in which these changes have occurred have altered substantially, leading to policy changes concerning the governance and regulation of the economies of EU Member States brought about by trends in economic liberalisation.

Trends in liberalisation and de-regulation evident since the 1980s have led, amongst other things, to growing divergences within national employment systems as a result of declining union power and continuous processes of externalisation, leading to new sector regulations (Herrigel, 1996; Katz and Darbishire, 1999; Quack and Morgan, 2000; Herrigel and Zeitlin, 2010). Based on a comparative analysis of employment regulation in a number of industries, Flecker (2010) finds that work and employment conditions are becoming increasingly diverse, not only at the global level but also within countries, within sectors and even within organisations, as a result of progressing processes of contractual outsourcing and spatial relocation (Flecker, 2010:16). In general, the argument is that outsourcing contributes to divergences because the receiving sectors mostly have less institutionalised industrial relations systems and are consequently less likely to be covered by sector agreements (Flecker, 2010). As argued earlier, it is not difficult to deduce from this that MSEs run the risk of ending up in weak and vulnerable positions in these processes of restructuring and that their workers will, consequently, be less likely to be covered by collective agreements. While research on these deregulation trends has focused to a large extent on the impact on collective bargaining and wage determination, it can be expected that a similar ‘erosion’ of health and safety regulations has occurred, pushing MSEs even further away from regulated practices. These wider changes have also caused both policy reorientation concerning issues of public regulation and concomitant reduction in the presence and role of institutions of public regulation in economic affairs. The trickle-down effects of these developments have been felt at institutional levels in relation to regulation on OSH, with a changed approach to law-making in which there is little appetite for new regulation but considerable enthusiasm for the ‘harmonising’, ‘streamlining’ and repeal of older (often more prescriptive) provisions in efforts to create a regulatory landscape more in tune with the dictates of economic neoliberalism. Among other things, this has also meant reduced resourcing for regulatory inspection in many Member States and a refocusing and rebranding of its approach to regulatory surveillance (see Walters et al, 2011, EU-OSHA, 2012). As we described in Chapter 2, the regulation of the affairs of MSEs has been a particular focus in these wider policy contexts, with liberalisation of the governing regulatory frameworks regarded as a means of supporting and enhancing their role in the economy.

In parallel, and arguably related to this trajectory, a shift has occurred in the ways in which law enforcement and surveillance are conceptualised, both in the policies of governance adopted in relation to corporate crime and in academic writing on the subject during the same period. As Tombs and Whyte (2013) put it:

*...scholars who describe or prescribe compliance-oriented (Hawkins, 1984), twin-track (Gunningham and Johnstone, 1999), smart (Gunningham and Grabosky, 1998), problem-solving (Sparrow, 2000), risk-based (Hutter, 2001), private or market-based (Hutter, 2006), and most significantly those who advocate varieties of responsive regulation (Ayres and Braithwaite 1992) — including really responsive or really responsive risk-based regulation (Black and Baldwin 2010) — all assume that what is generally referred to as ‘command-and-control’ regulation, where the state prescribes closely what constitutes compliance and then responds punitively on the basis of a deterrence-oriented approach, is unsustainable.*

They point out that this development has taken place in academic socio-legal and criminological writing over the same period that neoliberalism has held sway in economic and political policies internationally. They also trace it to the 1980s when, politically, regulating private economic activity became increasingly considered burdensome and led, as Hutter puts it, to ‘a growing disillusionment with state regulation’ (Hutter, 2006:1) and a deregulatory rhetoric among many of the more powerful Member States of the

EU (and elsewhere). Much of this rhetoric centred on claims of overregulation, inflexibility and regulatory costs and highlighted especially the ‘burden’ borne by small and micro businesses from such measures (even though such claims have often been shown to be without foundation — see, for example, Kitching, 2006). This was also the same period during which debates on the development of the process-based regulation of OSH risks were taking place at the EU level — a discourse which led to the adoption of Framework Directive 89/391 in 1989. Much of the small firm research reviewed in this chapter indicates that their arrangements for OSH (or the absence of them) are highly context sensitive, and this partly explains how and why they respond to regulation as they do (Barrett and Rainnie, 2002; Edwards et al, 2004; Baldock et al, 2006).

A recent contribution from Paul Almond (2015) on developments in the political direction of regulatory governance policy in relation to OSH in the United Kingdom suggests that United Kingdom policy-makers may have succeeded in altering the framing of the debate around regulation to one in which doctrinal features of neoliberal ideology have been transformed into a set of foundational assumptions about what regulation can, and ought to, look like. In this way, a wider, so-called, ‘common sense’ orthodoxy has replaced more specific attempts at deregulation and ‘at every stage, a neo-liberal, small-state agenda of individualized, business-oriented, narrowly-targeted regulation has exerted considerable influence over the direction of policy, to an extent that more explicit input from those advocating deregulation would be unlikely to achieve’ (Almond, 2015:229). All these features of the current wider discourse on regulation present major challenges for those strategies intended to support intervention to achieve improvement in health and safety arrangements in micro and small firms, as they need to be justified within wider policy discourse that is flowing in a different direction. Under such circumstances, even when it is possible to identify the presence of such intervention strategies to support OSH in small and micro firms among the initiatives of regulatory agencies in EU Member States, it is far from clear how effective they can be. We have been unable to find any empirical research measuring the effects of this wider climate on the attitudes towards regulation in small firms in the EU.<sup>38</sup> But it would be hardly surprising if, in such a climate, the influence of regulation on OSH arrangements in these firms was found to have some limitations.

Approaches to ‘new’ governance, regulation and regulatory surveillance are set in this context. We suggested earlier in this section that a nascent body of approaches to regulating OSH in small firms that attempt to exploit influences within the structural contexts in which MSEs are embedded is evident in the current strategies of some regulatory agencies. Recent research findings suggest that, in certain circumstances and sectors, influences within the structural relations in which organisations are embedded can be orientated towards the positive support of good practices on OSH in these firms (see, for example, Walters and James, 2011; Weil, 2011; Wright and Brown, 2013; James et al, 2014, 2015). And small firms are often found in these positions. There is growing interest among both policy-makers and academics in the possibilities of regulatory mixes in such scenarios that fit with thinking on ‘smart regulation’<sup>39</sup> — as is evident from the critique of Tombs and Whyte (2013) quoted above. These are all attempts to respond to wider features of change in the landscapes of economic regulation, but they are especially relevant to the situation of small and micro firms. While findings of some recent research show that actors within supply chains can positively influence OSH management in organisations with which they have relations, they also suggest that such effects are most likely to occur in situations where surrounding institutional pressures serve to create supporting market contexts. That is, these effects are most likely in institutional contexts where market, and related inter-organisational, logics are shaped by supplemental regulatory and reputational risks. In pointing in this direction, such findings both accord with, and receive support from, research on the facilitators of self-regulatory corporate behaviour (Short and Toffel, 2010) and the limits of forms of private governance (Mayer and Gereffi, 2010). However, it

<sup>38</sup> However, there is some interesting work emerging from Australia in which analytical techniques for discourse and sense-making concepts are utilised to help understand the influence of dominant discourse in public narratives concerning the role of regulation in health and safety at work in small firms. It offers some pointers for future studies of these issues in the EU (see Barrett et al, 2014).

<sup>39</sup> ‘Smart regulation’ is a term used with a variety of meanings. Here, we are using it in the sense in which it has been used in the scholarly discourse on regulation — see, for example, Gunningham and Grabosky (1998), rather than in the narrower meaning promulgated by the European Commission in more recent economic and regulatory policy documents (see European Commission, 2010:10–11).



is important to be clear here that these recent studies do not focus explicitly on MSEs, but only on situations in which they are typically found. A considerable amount of work, therefore, remains to be done in terms of both intervention and its evaluation before the potential identified here can be said to be a significant reality of ‘smart regulation’.

### 5.3 Conclusions

In the present chapter, we have tried to situate findings of the OSH research within wider contexts and specifically within findings of the wider literature addressing the social and economic relations of work in smaller enterprises. In so doing, we have shown that many of the determinants of OSH practice discussed in the more narrowly focused OSH research are themselves determined by wider social and economic practices and their contexts in small firms. In particular, we have noted that the ‘general and multifaceted lack of resources’ which determine workers’ experience of poor OSH are themselves an aspect of similar challenges confronting the wider social, economic, regulatory and labour relations issues in which this experience is embedded within MSEs and within the wider structures and business relations in which they are situated. Focus on this wider literature has also helped draw attention to the heterogeneity of MSEs, not only in terms of their variety but also in terms of the varieties of experiences within them. In this latter respect, we have noted that a consequence of attention on the experiences of owner-managers in MSEs in OSH research constitutes inadvertent homogenisation of this experience with that of workers in MSEs, while, in reality, as the wider literature shows, the experience of workers is often very different from that of their employers. We suggest that this is an area that warrants further attention in future research.

Turning to the understanding of the regulation of OSH in MSEs, here again we find the research literature paints a portrait of limited engagement and weak compliance practices on the part of owner-managers. As might be anticipated, the reasons for this poor compliance overlap with those identified in relation to poor OSH practice. Again, however, the situation is complex and the heterogeneity of MSEs makes for a mixed picture. We have outlined typologies found in the literature that attempt to describe compliance behaviours and the reasons for them. We again note in this respect that they suggest many MSEs pursue a ‘low road’ strategy towards their survival in which features that increase the vulnerability to harm of the workers employed in them are present, and it is often among such firms that the regulatory and socio-legal research identifies a prevalence of behaviours of non-compliance, or even subversion of the requirements of regulatory policies among owner-managers to suit their interests, often at the expense of those of injured workers (see Eakin et al, 2003). At the same time, the typologies also indicate that other micro and small firms operate within contexts more favourable to good practices in OSH. Such findings rightly draw attention to there being no ‘one size fits all’ formula to explain the situation of micro and small firms, their regulatory behaviour or the experience of work within them. These findings imply that improving prevention of harm in MSEs requires support strategies that are appropriate and effective in taking account of such features of practice and context in both their design and their implementation. That is, different MSEs have different needs, of which prevention strategies and their support must take account if they are to be relevant and effective.

In recent times, the regulatory literature has devoted considerable attention to theorising compliance and the means of its achievement in wider economic and political contexts. This literature is relevant to the situation of MSEs, partly because so many would appear to be non-compliant and partly because it is clear that for regulators and regulatory agencies the achievement of compliance is complicated by the nature and aims of wider political and economic policies within the EU and its Member States, in which the removal of ‘regulatory burdens’ is a prominent motif. In the foregoing account, we have drawn attention to some of the challenges of this situation, but we have also noted that there are an emergent set of regulatory strategies that parallel the current understanding in the academic literature concerning the advantages of regulatory mixes in new approaches to economic governance and regulation. While we conclude that these have considerable potential for addressing the challenges posed by MSEs and their structural situation, we also note that, to date, the evidence for their success is very limited indeed. This denotes a further important area for future investigation and research.

This brings us to a consideration of the evidence for ‘what works’ among interventions in the affairs of small and micro enterprises to improve the health, safety and well-being of their workers and the contexts that either support or constrain such actions. These are the subjects of the following chapter.

## 6 What kinds of supports and interventions are effective in improving OSH performance in MSEs?

Previous chapters in this report have reviewed the role and structure of MSEs in the EU economy, the research literature that has analysed health and safety outcomes among such enterprises, and the contextual and situational factors that influence the way MSEs approach and manage OSH and their workers' experiences of those systems and their outcomes. They have demonstrated that there is cause for concern in relation to the loss and suffering represented by the toll of death, injury and ill-health resulting from the inadequate arrangements to protect workers from harm in these enterprises.

They point towards the importance of resources and support for OSH in these enterprises and, therefore, the aim of this chapter is to analyse the literature in order to learn what it can tell us about which methods and strategies are effective in improving OSH conditions in MSE. This is a complex and challenging subject. Its complexity can be illustrated with a few examples demonstrated by the review presented in previous chapters, which show that:

- health and safety conditions vary greatly between sectors, from severe physical hazards in some sectors to mainly psychosocial problems in other sectors;
- there is a huge variation within sectors, ranging from companies with a high ambition to provide a safe and sound work environment to companies that do not understand what work environment means and have no ambitions whatsoever;
- the decision latitude of owners and managers in MSEs varies, owing to, among other things, their positions in value chains, ranging from the capacity to decide about working methods, organisation and premises to having to adapt entirely to customer demands and conditions;
- interventions in OSH are part of an on-going development in a complex context. They have to be understood as part of broader societal and economic developments that both have an impact on and are influenced by national and sectoral policies and enforcement of regulation (Hasle et al, 2014:74).

As we have also argued in previous chapters, these wider societal and economic developments are not restricted in their effects to influences upon the way things are done in MSEs, but are part of more pervasive changes occurring across the economic and social profile of the EU as a whole. They have led, among other things, to a shift in the significance of structures and processes that have historically determined the centrality of the employment relationship in the experience of work for the majority of workers (Bosch et al, 2009; Baccaro and Howell, 2011). This has helped to increase precariousness of employment for many workers (Standing, 2011), as well as contributing to greater movement of both employers and labour across national borders (Cremers et al, 2007) and, arguably, to an increase in the vulnerability of many to work-related risks (Holtgrewe et al, 2015). The latter is especially so when these changes are combined with the effects of political and economic ideologies prevalent in current governance, which serve to undermine and reduce the role of state surveillance in protecting workers (Anderson, 2010; Fudge, 2012). The point about all this is that it is not the size of the unit of employment that is driving these changes, or their consequences for workers' experiences of risk. Nevertheless, such consequences are likely to be more concentrated among smaller enterprises at the low end of survival strategies partly because such enterprises are themselves created by such conditions and partly because they are not well resourced to address them in ways that benefit the protection of their workers.

Not surprisingly in such circumstances, and as already highlighted in the preceding chapters, MSEs constitute a particular challenge for the design of OSH interventions aimed at improving the work environment. This challenge has been discussed in the specialist literature for several decades and a broad consensus about the general principles for interventions has been established. As Legg et al (2015:192) sum up: '...the most successful methods appear to be tailored, action-oriented, low cost approaches, combining health and safety with other management goals, and based on trust, participation and dialogue' (see also Walters, 2002; Champoux and Brun, 2003; Hasle and Limborg, 2006; Kogi, 2006; Breslin et al, 2010; Cagno et al, 2014).



However, this broad consensus about the general approach to interventions in MSEs leaves many unanswered questions. There is still much to learn in order to understand the mechanisms that create change in MSEs and not least to understand how knowledge about interventions can be transformed into broad ranging policy programmes. While the above-mentioned literature has made suggestions for policy interventions, such as focusing on intermediaries and workers' involvement (Walters, 2002), empirical analyses of many such programmes are still limited and the extent to which the OSH research provides adequate analysis of the contexts in which such involvement takes place, or might be supported is, as we shall see confirmed in the present chapter, especially limited.

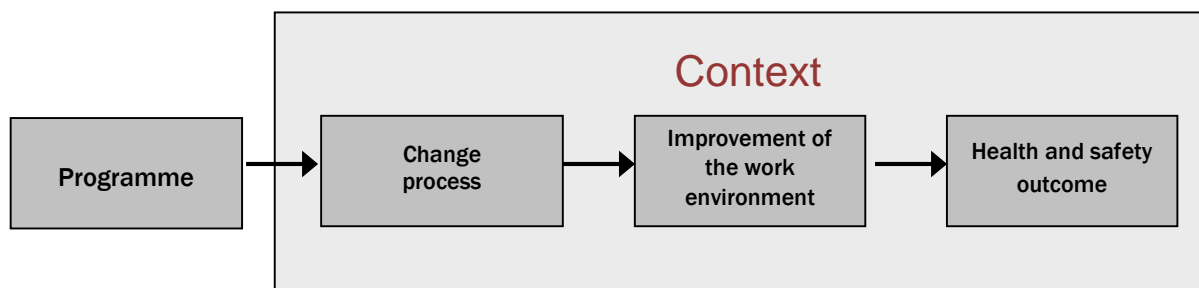
## 6.1 Framing the inquiry

In this chapter, we analyse progress made during the last decade of research into interventions in MSEs in order to identify both its achievements and the gaps in this research. The aim is not to conduct a full and comprehensive review of the research literature, but rather to give an informed overview of current knowledge and recent developments in the understanding of how interventions can be tailored to present conditions and contexts.

We use the understanding of intervention processes aimed at MSEs suggested by Hasle et al (2012a) (Figure 6.1) as a framework. Drawing from the critical realist tradition of inquiry in the social sciences, our review builds upon one approach within this way of thinking about social phenomena known as realistic evaluation which, as we have already discussed, is based on the understanding developed in the work of Roy Pawson (see, in particular, Pawson and Tilley, 1997), which seeks to answer the question 'what works, for whom and in which contexts'?

Hasle et al (2012a) have suggested a simple model for designing interventions, illustrated in Figure 6.1.

**Figure 6.1: A model for the causal chain in the programme theory for work environment programmes (based on Hasle et al, 2012a)**



The idea of this model is that interventions on OSH in MSEs are designed by working backwards from their desired outcome. The point of departure is, therefore, the desired health and safety outcome. To achieve it, certain changes in the work environment are required, and an understanding of the work environment and its context can be used to develop theories about the necessary change processes in the MSE's work environment. A programme can then be designed by taking all of this into account. In order to dig deeper into the intervention process, the suggestion by Fixsen et al (2005) (Figure 6.2) about factors that are important for successful interventions provides further important insights for our analysis. In Figure 6.2, after Fixsen et al (2005), the causal chain has been elaborated with some of the main issues under each step in the model, and we use this chain to structure our review.

Figure 6.2: Important factors for interventions (Fixsen et al, 2005)

<p><b>Programme</b></p> <ul style="list-style-type: none"> <li>➤ The <b>content</b> of the intervention has to be adapted to the needs and conditions of the target group.</li> <li>➤ The <b>design</b> of the intervention and the support offered have to be adapted to the conditions in the target group and to the context.</li> <li>➤ <b>A dissemination</b> strategy should effectively reach the target group.</li> </ul> <p><b>Change process</b></p> <ul style="list-style-type: none"> <li>➤ <b>Motivation</b> and <b>drivers</b> should motivate or push enterprises to implement the change that is the focus for the intervention.</li> <li>➤ <b>Organisation</b> of the intervention is important, including who needs to be involved.</li> </ul> <p><b>Improvement of the work environment</b></p> <ul style="list-style-type: none"> <li>➤ Upon usage of the provided support from the intervention, the target group has to be able to decide what to do and how to do it, and to actually <b>implement change</b>.</li> </ul>
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In the following sections, therefore, we first present the methods we have used in our review of interventions, before briefly discussing the range of OSH interventions in MSEs covered in the research literature. We then turn to discussing the content and design of the interventions on which we have focused. We consider the various designs, tools and methods for OSH interventions in MSEs we have identified as having the capacity to bring about changes in the work environment. We also discuss the lessons from this literature concerning dissemination of OSH knowledge. We then examine the change process itself, including the evidence concerning how actors within MSEs can be motivated, and which actors need to be involved. Through this approach, and by discussing limitations identified in the existing research literature, we point, in the concluding section, to the main research gaps identified in our review. We also reflect on implications for the role of interventions presented by their framing within the wider determinants of their application and use (and, indeed, their very existence), which are found in the different policy, economic and regulatory contexts in which such strategies to support OSH in MSEs are embedded in the EU and its Member States, and we comment on the limited reflection concerning these matters within the OSH research we have reviewed.

## 6.2 Methods

As our focus concerns the study of the development of new knowledge about interventions in MSEs, we have concentrated on empirical studies of practical interventions described in peer-reviewed scientific publications. We have taken 2004 as a starting point for the review, as we wanted to highlight the most recent developments, and previous reviews have discussed earlier findings (for example, Walters, 2002; Champoux and Brun, 2003; Hasle and Limborg, 2006; Kogi, 2006; Breslin et al, 2010). To undertake the present review we therefore carried out an initial and limited systematic literature search in the bibliographic database Scopus, which provides very broad coverage of academic literature regarding OSH and OSH management and interventions. The aim was to provide an overview of developments regarding OSH interventions in MSEs.

The search gave us a list of 199 articles and books which then underwent title and abstract screening in order to locate the studies actually dealing with OSH interventions and published in English. This left us with a final list of 61 studies (three were added during the initial review through references which were assessed to contribute valuable knowledge and which had been missed in the initial search owing to different wording). All these studies were then fully reviewed to see whether or not they described MSE conditions and contexts in relation to interventions. This process excluded 22 studies that did not describe or discuss interventions, but rather dealt with specific characteristics of MSEs than could affect their OSH outcomes, leaving the 39 studies included in this chapter. They have been divided in two groups. The first group of 15 studies had a systematic approach to interventions and they are included in the review of interventions (see Table 6.1). The remaining 24 articles contain useful understandings of interventions in MSEs which, for example, may relate to certain steps in the intervention process,

including why particular strategies may have good or limited effects and what factors in the context need to be considered when developing a programme. These additional references are cited in this chapter, included in the list of references and used in our introductory and concluding discussions. The 15 articles in Table 6.1 have been critically evaluated with regard to quality (for example, whether or not there was a systematic evaluation of the uptake and the outcomes of the interventions), sample size, research and intervention design, as well as the potential for wider application of the intervention approach. This information was summarised and the findings contributing to an understanding of why interventions succeed, fail or do not give all the desired effects were noted.

**Table 6.1: An overview of the 15 empirical studies**

Reference	Target group	Size of enterprises	Country
Agnello et al, 2014	Three galvanic plants (Seveso plants)	Not available (typical size in sector 8–10 employees)	Italy
Bragatto et al, 2014	Three galvanic plants (Seveso plants)	Not available	Italy
Bragatto et al, 2015	One galvanic industry, one glue manufacturer (Seveso plants)	5 and 30 employees respectively	Italy
Bush et al, 2009	213 owners/managers from 161 restaurants	12% 1–5 employees, 14% 6–10, 26% 11–20, 17% 21–50, 23% >50 and 7% unknown	USA
Kines et al, 2013	Six metal industry enterprises (intervention) and eight controls	10–19 employees	Denmark
Brosseau et al, 2014	49 collision repair workshops	Average of seven employees (range 1–29)	USA
Parker et al, 2015	49 collision repair workshops	Average of seven employees (range 1–27)	USA
Morgaine et al, 2006	6,341 farmers (8% of New Zealand farmers)	Not available, but many self-employed	New Zealand
Olsen and Hasle, 2015	Roughly 1% of all eligible New Zealand farms participated in the Workplace Safety Discount scheme	Fewer than 10 employees	New Zealand
Stave et al, 2008	88 farmers and farm-workers	Not available (in Sweden, 94% of the enterprises have no employees and 99% have fewer than five employees)	Sweden
Torp, 2008	226 auto repair shops (113 in the control group)	2 to 140 employees (mean 19, median 13)	Norway
Hasle et al, 2010	164 accountants as intermediaries working in various industries	The majority of the enterprises had fewer than 20 employees	Denmark
Nielsen et al, 2015	Two firms in wood industry and two in metal industry (two interventions and two control)	20–49 employees	Denmark
Ipsen et al, 2015	Two manufacturing and two IT companies	31–187 employees. However, only departments participated, so there were 25–37 participants in the intervention	Denmark
Kvorning et al, 2015	Small construction and auto repair firms (127 and 168 firms respectively took part in study)	Fewer than 9 in construction and fewer than 25 in auto repair. 1 to 13 in the cases studied	Denmark

### 6.3 The range of OSH interventions in MSEs

Intervention is a concept that can be used to describe a wide variety of actions, ranging from intervening in one company in order to achieve some kind of specified change, to policy programmes directed towards, for example, all companies in a sector, in a nation or within the EU. In this review, the aim was to focus on interventions that have the potential to be implemented in a larger group of enterprises — for example, a sector and usually limited to a nation. However, many studies are what we term pilot studies (studies designed to try out a certain tool or approach within a limited area, group of companies and/or timeframe). We found only three empirical studies of national interventions (shown in Table 6.2); two on increasing risk awareness among farmers in New Zealand — the FarmSafe programme (Morgaine et al, 2006; Olsen and Hasle, 2015) — and one about a Danish programme on prevention packages (Kvorning et al, 2015; and additional information in Hasle et al, 2012a). In addition, an overview of a Swedish programme about regional safety representatives (without a specific empirical study) can be found in Frick (2009). Hence, there are few research studies about the ultimate aim: to implement OSH improvements on a large scale, such as in an entire sector in a country. It is in particular remarkable that there are no in-depth studies of how regulation in the form of legislation and inspections influence MSEs. However, as we discussed in the previous chapter, such studies that do exist indicate the considerable importance of such interventions. There is therefore a considerable need for well-informed understanding of their effects at a time when regulation of health and safety in relation to small and micro firms is a significant topic for policy debate and possible change at both national and EU levels.

**Table 6.2: The national policy interventions**

Reference	Target group	Country	Aim/content	Economic incentive	Intermediaries
Morgaine et al, 2006	6,341 farmers (8% of New Zealand farmers)	New Zealand	Awareness raising of physical hazards and improving attitudes	Reduction of insurance fee	Government agency with responsibility for coordinating the provision and quality of national qualifications
Olsen and Hasle, 2015	Roughly 1% of all eligible New Zealand farms participated in the Workplace Safety Discount scheme	New Zealand	OSH training through intermediaries	Reduction of insurance fee	Farmers associations and agricultural consultants
Kvorning et al, 2015	Small construction and auto repair firms (127 and 168 firms respectively took part in study)	Denmark	Motivational factors for participating in OSH programmes	Refunding spending on changes	Inspectors and social partners

We can thus identify a major research gap regarding policy programmes aimed at MSEs, as few or none of the intervention studies aimed at MSEs have been transformed into sector, regional or national policy programmes — at least not as documented in the scientific literature.

### 6.4 Evaluation of outcomes

Evaluation of outcomes of interventions in MSEs is difficult, and evaluation of sustainability even more so, as it requires long-term follow-up. There are a number of reasons for these difficulties. For example, because of their low numbers of employees, large numbers of small and micro enterprises have to be included in studies for them to be statistically meaningful. In addition, many small enterprises have a limited lifespan, which hampers prospective study of both health effects and sustainability. In this review, we did not find any studies that included long-term health outcomes, and the systematic review carried out by Breslin et al (2010) identified only one older study (Wells et al, 1997) that included health effects.

The most common form of evaluation is to study workplace changes in terms of reduced workplace exposure and/or as implemented OSH-related changes. We found 9 studies (Table 6.3) out of 15 that included some type of outcome evaluation.

**Table 6.3: Studies with outcome evaluation**

Reference	Quantitative evaluation	Qualitative evaluation	Outcome evaluation
Bush et al, 2009	Questionnaire pre and post training	10 interviews after three to six months	Programme components used and worksite changes
Kines et al, 2013	Questionnaire pre and post intervention	Interviews pre and post intervention	Prioritised and accomplished tasks (quantified)
Brosseau et al, 2014	Intrapersonal comparisons of experts' judgments. Audit results and expert follow-up pre and post intervention		Share of recommendations implemented (quantified)
Parker et al, 2015	Intrapersonal comparisons of experts' judgements. Audit results and expert follow-up pre and post intervention		Share of recommendations implemented (quantified)
Olsen and Hasle, 2015	None	Interviews	Qualitative assessment of factors important for a positive effect of intermediaries efforts
Torp, 2008	Questionnaires for both managers and workers pre and post intervention		Both the workers' and the managers' surveys showed statistically significant improvements in the intervention compared with the control group
Hasle et al, 2010	Questionnaire to accountants at the end of training and follow-up (48% replied on follow-up)	13 interviews with accountants answering the follow-up questionnaire	Over two-thirds of the accountants in the follow-up questionnaire had given OSH information to clients
Nielsen et al, 2015	Pre and post measurements including questionnaires and inspections	Interviews	Safety measures improved significantly in one of the intervention firms
Ipsen et al, 2015	None	Interviews and observations	Three out of four firms succeeded in implementing the programme, which led to changed work practices

The following sections contain a more thorough discussion of the various interventions and their evaluation results. Six of the studies do not include an effect evaluation but they evaluated or studied the intervention process in various ways and they, therefore, provide important knowledge about how interventions are implemented.

## 6.5 Intervention programmes

In this section, we discuss the subject and design of programmes aiming at OSH improvements. We use the term 'content' to describe the OSH issues that the interventions address, and the term 'design' to describe how they are conducted and organised and how the support to MSEs is designed. Their content includes, for example, OSH management and management systems, safety culture and awareness raising, and also good practice, including detailed advice on measures to reduce common risks in the relevant sector. These examples show that the subject of interventions varies. There are examples of interventions with a limited and clearly focused scope — for example, to implement a certain web tool for follow-up of near-misses and accidents or to increase risk awareness among farmers.

However, there are also examples of broader approaches where, for instance, a focus on management systems is combined with detailed advice on improvements through applying good practice (e.g. Bush et al, 2009; Brosseau et al, 2014; Nielsen et al, 2015).

**Table 6.4: Overview of the aims of the 15 empirical intervention studies**

Reference	Sector	Aim
Agnello et al, 2014	Galvanic industry	A web tool to support follow-up near-misses and accidents as a basis for improving safety
Bragatto et al, 2014	Galvanic industry	A web tool to support OSH management in Seveso plants
Bragatto et al, 2015	Galvanic and glue industry manufacturers	A web tool to support OSH management in Seveso plants
Bush et al, 2009	Restaurants	Training of managers to improve OSH management, involve employees and apply good practice
Kines et al, 2013	Metal industry	Safety culture, participatory behaviour-based injury prevention
Brosseau et al, 2014	Auto repair	Experts making audits and providing guidance on good practice
Parker et al, 2015	Auto repair	Experts making audits and providing guidance on good practice
Morgaine et al, 2006	Agriculture	Awareness raising of physical hazards and improving attitudes
Olsen and Hasle, 2015	Agriculture	OSH training through intermediaries, good practice
Stave et al, 2008	Agriculture	Long-term effect on safety attitudes and behaviour
Torp, 2008	Auto repair	OSH training of managers in OSH management in combination with good practice
Hasle et al, 2010	General (accountants as intermediaries working in various industries)	OSH training and information for the accountants. Focus on workplace assessment/prevention packages
Nielsen et al, 2015	Wood industry and metal industry	Integrated OSH approach combining culture and behaviour changes
Ipsen et al, 2015	Manufacturing and IT companies	Organisational changes to reduce stress levels
Kvorning et al, 2015	Construction and auto repair	Motivational factors for participating in OSH programmes

The design includes, for example, which intermediaries will be involved, how companies will be approached and the nature of the support offered (organising training, discussions in workshops or focus groups, providing expert support, web tools, etc.). Table 6.4 gives an overview of the studies that we mainly draw on in the following sub-sections.

### 6.5.1 Content of interventions

Some of the interventions mainly focused on risk awareness and safety culture (Morgaine et al, 2006; Stave et al, 2008; Kines et al, 2013), including discussions about how awareness and safety culture can improve OSH. Kines et al (2013) achieved good results from increasing awareness in combination with focus group discussion with peers, including discussion of the commitment to take responsibility for



identified risks and measures. In an intervention aiming to raise awareness among farmers, Stave et al (2008), however, found that outcomes were not improved by presenting information in a theoretical educational manner focusing on risks and the negative consequences of risks. The information even made some participants defensive. When trying to motivate actions or lack of actions among farmers (Stave et al, 2007), Morgaine et al (2006) presented similar results. Working on attitudes in a purely theoretical manner could be problematic (Morgaine et al, 2006:369):

*The FarmSafe Awareness workshop is a classroom-based programme so no practical exercise can take place. This has left some participants struggling with how to implement new safety practices.*

Even though the FarmSafe initiative was highly appreciated by the participants, this conclusion illustrates that awareness alone might not be enough. There is also a need for complementary support that will facilitate identification of concrete risks as well as tools to implement the changes needed (Olsen and Hasle, 2015), which points to the potentially fruitful application of carefully designed programmes. In fact, there is also evidence from behavioural research that just informing about risks, without any information on how to control risks, often results in passiveness and sometimes also denial of the risk (Hasle et al, 2012b).

In several of the studies, the OSH advice provided was very focused on good practices and behaviour, described as identifying common risks in the sector complemented with concrete advice on how to reduce the risks (Bush et al, 2009; LaMontagne et al, 2009; Olsen et al, 2010; Brosseau et al, 2014). Parker et al conclude that, in car collision workshops, improvements were greatest where technical assistance was offered (Parker et al, 2015). When evaluating what control measures are adopted, it seems not surprisingly that the simplest and cheapest measures are easiest to implement — for example, machinery guarding in small metal shops (Samant et al, 2006) and, in car collision repair workshops (Brosseau et al, 2014), right-to-know training, ensuring that emergency exits were not locked from the inside, updating and properly locating fire extinguishers, training employees to use extinguishers, chaining compressed gas cylinders and ensuring that cars were properly supported when employees were working underneath. Measures that were more difficult to implement were, for example, stopping routine spraying outside the booth.

An interesting example of applying good practice regarding safe work and administrative routines in an MSE sector is found in a study of chemical risk management (Olsen et al, 2010). In the case of apple growers, managers showed good compliance with health and safety regulations but at the same time they demonstrated poor knowledge of both health and safety regulations and the health effects of the chemicals they were using. This is explained as an effect of an environmental programme, which included routines for safe use of pesticides and awarded the apple grower a certificate after implementing the programme. The study showed it is possible to learn how to work safely and to follow required routines and implement good practice without having detailed knowledge of either the risks or the relevant legislation. These results seem to be in line with the results presented in Chapters 4 and 5 pointing towards MSEs' difficulties in implementing process regulation as safety management systems including, for example, demands for risk assessment. The demands in the environmental programme for apple growers can be interpreted as a description of good practice for handling of pesticides, which obviously is easy to implement. This implies that OSH improvements in MSEs can be achieved through programmes or interventions with a dual aim, such as one which also includes environmental objectives.

When using good practice, it is necessary to reflect on the pros and cons of good practice. Is there always a good practice? Who decides what is good and what is not? One argument from legislators when changing from a prescriptive type of regulation (which includes demands for following defined good practice) towards process regulations (as is described in Chapter 5) is that good practice may hamper development, through providing solutions that are old-fashioned. When using good practice, it is necessary to deal with these kinds of questions in order to develop advice that is helpful, is not too rigorous and does not hamper development. The intervention studies using good practice do not discuss good practice in these terms. The descriptions are limited to occasional description on the development of good practice by experts (e.g. Bush et al, 2009). This implies that there is a gap in the research about good practice and a need to develop the understanding of the development, content and use of good practice.



In other sectors, such as the galvanic industry (Seveso plants), the focus was on management systems (Bragatto et al, 2014) including follow-up of accidents and near-misses (Agnello et al, 2014) and in some cases a combination of these approaches (Bush et al, 2009; Brosseau et al, 2014). Management systems are mainly about the processes and methods used to identify and control risks, not about the risks as such. Measures that were more difficult to implement were those requiring more abstract systematic planning and writing, such as written safety programmes, implementation of a written policy requiring employees to follow safety rules, etc. (Brosseau et al, 2014). The research demonstrated that the challenge for MSEs is to develop methods for this systematic work that are easy to use and concrete enough to contribute to problem solving. Integrated OSH approaches that try to incorporate both cultural and behavioural aspects seem to be a recent strategy offering some promise for the combination of different tools and methods (Kines et al, 2013; Nielsen et al, 2015).

The conclusion is that the outcomes of interventions benefit from including safety and awareness raising. This is, however, not sufficient. Disseminating good practice seems to give good results when the good practice is adapted to the company or at least to the sector. Management systems, including routines and follow-up of accidents and near-misses, are often needed to deal with more complex and unforeseeable problems. However, management systems demand more time and knowledge/training of users, which may limit their uptake and effect, which has already been discussed in section 5.2. The conclusion is that interventions need to consider including both safety awareness and a focus on good practice in order to quickly and effectively solve problems common to the sector, and combine this with OSH management to deal with more complex OSH issues.

## 6.5.2 Design of interventions

We begin this sub-section with a discussion of the tools and methods utilised in the intervention studies. A wide array of methods and tools are used, including checklists or provision of advice on how to reduce common risks in the sector, and templates for routines and tools within management systems. These tools are often web based, but are sometimes combined with or provided through expert support. Training in combination with workshops or focus groups is another common approach (see Table 6.5).

**Table 6.5: Content, methods and tools used in interventions**

Reference	Sector	Content	Design: methods and tools
Agnello et al, 2014	Galvanic industry	Follow-up near-misses and accidents, safety	Web tool
Bragatto et al, 2014	Galvanic industry	OSH management system, safety	Web tool
Bragatto et al, 2015	Galvanic and glue industry manufacturers	OSH management system, safety	Web tool
Bush et al, 2009	Restaurants	OSH management system and good practice	Training
Kines et al, 2013	Metal industry	Safety culture, participatory behaviour-based injury prevention	Participation and training
Brosseau et al, 2014	Auto repair	Audits and good practice	Expert advice
Parker et al, 2015	Auto repair	Audits and good practice	Expert advice
Morgaine et al, 2006	Agriculture	Awareness of physical hazards and attitudes, safety	Training

Reference	Sector	Content	Design: methods and tools
Olsen and Hasle, 2015	Agriculture	Good practice, safety	Training
Stave et al, 2008	Agriculture	Attitudes and behaviour, safety	Training and focus groups
Torp, 2008	Auto repair	OSH management in combination with good practice	OSH training of managers
Hasle et al, 2010	General (accountants as intermediaries working in various industries)	Workplace assessment, information about legislation	Training
Nielsen et al, 2015	Wood industry and metal industry	Integrated OSH approach combining culture and behaviour changes	Training, coaching and workshops
Ipsen et al, 2015	Manufacturing and IT companies	Organisational changes to reduce stress levels, psychosocial factors	Participation
Kvorning et al, 2015	Construction and auto repair	Motivational factors for participating in OSH programmes	Trial of technical aids

*Web-based tools:* Most, but not all, interventions were based on companies using some kind of tool to aid OSH practice. The web-based tools were usually not described in detail in the intervention studies, but seemed to vary a lot. Examples included design tools for bakeries and pastries (Gardeux and Marsot, 2014), and interactive support and templates for management systems (Bragatto et al, 2014) or for follow-up of accidents and near-misses (Agnello et al, 2014). The web was also used to collect information and make it easily accessible for the target group (Bush et al, 2009), even though ICT competencies might not be as good as anticipated in MSEs (Lehtinen, 2006). Generally, there were few evaluations of the application of such tools at the workplace level. Available evaluations usually focused on the reliability of the tools (e.g. LaMontagne et al, 2009; Agnello et al, 2014; Bragatto et al, 2014, 2015) and not their usability or effectiveness. Checklists were regarded as an easy way to assess and evaluate multiple companies or to have firms carry out self-assessment (c.f. Samant et al, 2006, 2007). OSH checklists are often presented and distributed on the internet but a systematic evaluation of their effects is lacking, although it is claimed that they are often appreciated by MSE users and thought to be effective. Moreover, it is claimed that there is evidence of their effectiveness in other fields, such as health care, where it is important to follow detailed routines (Gawande, 2010). However, set against this are arguments against the dangers of paper compliance, ‘tick and flick’ practices, etc., such as discussed by Quinlan (2014) and others. There is also the often-aired problem of generality versus specificity in relation to checklists (as with other tools that are intended to simplify requirements). Here, the danger is that checklists may be too generic rather than being tailored to the risks/hazards present in specific workplaces, or their production is impractical because their usefulness applies only to very specific cases (see, for example, Walters, 2008, on their use in chemical risk management in small firms).

*Training and education:* Training in OSH management and routines, as well as in areas such as good practice, is a rather common intervention. Several of the studies reviewed in this report showed good results of OSH training efforts (e.g. Casteel et al, 2008; Torp, 2008; Olsen and Hasle, 2015). However, where the training included identification of risks as well as measures that reduce risks (which corresponds to providing advice about or developing good practice in the sector), the effect seems to increase (Bush et al, 2009; Kines et al, 2013). Studies in which peers performed training often showed good results (e.g. Samant et al, 2006; Torp, 2008). However, as we have pointed out elsewhere in this

report, training can be expensive owing to the resources required to reach out to and train a huge number of MSEs.

Several interventions have used different kinds of workshops, such as focus groups, where managers meet with peers from the sector or with employees to discuss OSH matters (Morgaine et al, 2006; Stave et al, 2008; Kines et al, 2013), solve problems (Stave et al, 2008) or take part in training sessions (Bush et al, 2009). These workshops seem to be effective in raising awareness (Morgaine et al, 2006; Samant et al, 2006; Stave et al, 2008; Torp, 2008; Kines et al, 2013) and they may contribute to problem solving (Kines et al, 2013). In addition, they have been shown to support employees' participation in discussion about OSH matters and OSH management. The opportunity to discuss with peers was one of the most valued aspects of training workshops for restaurant supervisors (Bush et al, 2009) and New Zealand farmers (Olsen and Hasle, 2015). The importance of discussions about OSH was also highlighted by Parker et al (2015), who concluded that improvements were more likely to be achieved if they were developed by experts together with managers rather than if they were simply included in a report.

In conclusion, the research indicated that training based on workers' participation in combination with good practice generated a larger number of control measures than training without guidance on common risks and how to reduce them. The limitations of training as a strategy related mainly to the cost and resources needed for reaching out to a large number of MSEs — for example, in a sector.

*Participatory approaches:* It has been widely acknowledged that active worker participation is required to achieve effective OSH management (Walters, 2003; Knudsen et al, 2011; Crollard et al, 2013; Kines et al, 2013; Masi et al, 2014). Workers' knowledge about their work and work practice is invaluable and needed in the improvement process. An evaluation of the participatory approach (discussions with employees) showed good results with high success rates in a follow-up analysis (Kines et al, 2013). The question is, however, how to achieve this engaged commitment and participation. Safety coaching of owner-managers (Kines et al, 2013) and training of managers (Torp, 2008; Bush et al, 2009) and of managers and workers that were members of a safety committee (Crollard et al, 2013), as well as of selected workers (Ipsen et al, 2015), have been shown to be effective in improving OSH management and worker–management cooperation. The Swedish system of regional safety representatives is another strategy for involving workers in OSH discussions (Frick, 2009). In a US study, it was considered important to involve immigrant workers in safety committees, as they would be intermediaries for a significant portion of the workforce (Crollard et al, 2013). Bush et al (2009) concluded that training managers of restaurants and providing a model where the managers involved employees and trained them resulted in managers adopting a philosophy of employee involvement in their health and safety programmes (Bush et al, 2009). Overall, the research demonstrates that there are different ways of engaging workers and using workers' knowledge in change processes, ranging from involving workers to telling them what to do. But the studies showing the best results come from the ones that have made good use of workers' knowledge and experience in combination with the provision of training.

In the intervention studies, there is no discussion about national contexts or how they affect workers' participation. Arguably, to make use of workers' knowledge, an open dialogue is necessary, where it is possible to discuss current OSH problems and how to solve them. The conditions for such a dialogue may vary among the EU Member States, as Chapter 5 has already highlighted.

### 6.5.3 Expert advice

There are several examples of interventions where experts provide tailored advice to companies about good practice and industrial designs. The personal support may be provided by experts that assist in risk identification and problem solving (Samant et al, 2006; Brosseau et al, 2014). In one study, expert support was combined with training (Casteel et al, 2008; Crollard et al, 2013). In one sector — car collision repair — good practice was developed by experts and used by industrial hygienists visiting the companies. It was concluded that 'it is less likely that owners of auto collision repair businesses can reliably employ such a tool' (an audit tool for identifying unsafe working conditions) (Brosseau et al, 2014:362). In some intervention studies, experts made audits in order to identify risks and provide suggestions for solutions (Brosseau et al, 2014), probably reflecting a belief that it is difficult for MSEs to identify risks and develop solutions themselves without expert support. Many of the suggestions for

improvement were implemented (Casteel et al, 2008; Olsen et al, 2010; Crollard et al, 2013; Bush et al, 2015). However, it is questionable if this kind of expert support can be used as a strategy on a larger, EU-wide, scale, owing to the absence of such a focus in national policies and regulation in many Member States and the resulting absence of existing infrastructures and resources needed to reach out to such large numbers of MSEs. As Walters (2008) goes to some lengths to show in a book devoted to an analysis of strategies to support small firms in the management of chemical risks in different EU Member States, the role of prevention services in the EU as a whole is mixed, and while there are some examples of Member States in which the expertise of external prevention services is used widely — even on a compulsory basis, and as part of national policy that specifically addresses smaller companies (such as in Austria) — in others the provision is far less systematic and largely unregulated, as is the case in the United Kingdom and Ireland.

Some studies mention OSH practitioners or safety officers (Casteel et al, 2008; Crollard et al, 2013) as important actors in small companies. The use of a private safety consultant has been shown to be associated with higher levels of health and safety practices in terms of written safety programmes, respiratory protection programmes, emergency action plans and a policy for wearing hearing protection when using air-powered tools (Brosseau et al, 2014). However, most MSEs cannot afford to employ a safety officer or OSH practitioner, and most MSEs are reluctant to hire an OSH consultant because of the cost. This is also reflected in studies on MSEs' search for OSH support, showing that colleagues in the sector, suppliers and sector organisations are commonly used as advisers (Hasle and Limborg, 2006; Laird et al, 2007; Olsen and Hasle, 2015). Even in countries in which such services are provided either through insurers (e.g. Spain until recently) or through relatively low-cost commercial providers, there is a risk of a focus on paper compliance rather than achieving a real improvement in working conditions. This would seem to be suggested, for example, by the high proportions of external risk assessment found in the ESENER data when they are compared, for example, with national compliance data (see Chapter 4).

The cost of providing expert support to individual companies is high. Hence, such support can hardly be used as a core strategy in programmes aimed at improving OSH conditions in MSEs. Still, there is evidence that expert support is appreciated and improves OSH conditions. The challenge is to make use of expert knowledge on a broader scale, for example, for sectors rather than individual companies. This has been done in some instances — for example, in describing good practice and designing tools and checklists, as described above.

*Tailoring to context:* The literature agrees on the need to tailor interventions to the specific contexts and conditions in companies (Legg et al, 2010). The design of intervention programmes aimed at MSEs, therefore, needs to take several — both internal and external — moderators into consideration. Contextual factors that have been described as affecting interventions are individual factors, such as the characteristics of owner-managers, for example education, personality and values (Laird et al, 2011; Masi et al, 2014); environmental factors, such as safety climate; job insecurity and leadership (Hasle et al, 2012b; Masi et al, 2014); and the available (and limited) resources in small companies (Olsen et al, 2012:6002). Research demonstrates that the owners and managers of MSEs have a strong focus on operational outcome and often feel they lack the time and resources to prioritise OSH (Ipsen et al, 2015; Legg et al, 2015; Masi and Cagno, 2015). Owner-managers might, therefore, be reluctant to participate in programmes or studies, as was reported, for example, in a study on the metal industry (Samant et al, 2006:359). In addition, interventions may also be affected by decision-making at several different levels: the government, regulators, associations, company, management, staff and the work and technological systems (Rasmussen and Svedung, 2000).

Intervention studies usually take available knowledge about OSH conditions as the point of departure. In addition, researchers in several studies cooperated with representatives in the trade in order to adjust the advice to the conditions and needs of the companies in the sector (Bush et al, 2009; Brosseau et al, 2014), and in several studies experts adapted the generic sector advice to the individual companies in the intervention study, with good results in terms of many implemented OSH improvements (Casteel et al, 2008; Brosseau et al, 2014). This latter strategy can be applied in a research study, but in real life it is seldom possible to tailor advice in this resource-consuming way. There is still a need for strategies that offer advice that can easily be tailored to individual companies, without too much effort or expert

support. It is possible that such advice adapted to the level of the sector may be a viable compromise, but the difficulties of balancing issues of generic advice with the need for specificity should not be underestimated.

The intervention studies give examples of strategies and activities that are adapted to the target group and its context. For instance, showing respect for the conditions in the sector when planning meetings was considered important by farmers, so they could make it fit with their work at the farms (Morgaine et al, 2006), and adapting to the multi-cultural and multi-lingual workers in a safety committee has also been noted (Crollard et al, 2013).

These examples illustrate a few aspects of the complexity found in the conditions and contexts of work in MSEs. However, in most intervention studies, these conditions and contexts are usually neither described nor discussed in an analytical or critical way, but rather just taken as the point of departure for the study and occasionally mentioned when explaining results in evaluations of the interventions. There is a need to increase the understanding of what conditions and contexts are relevant for OSH interventions in order to adapt programme theories appropriately.

In conclusion, adapting to the relevant context requires a good understanding of MSEs and their situation. As context varies a lot, cooperation with, for example, sector organisations and representatives of the sector may contribute to this kind of knowledge. But the research suggests that discussion about context requires a broad and open dialogue in order to identify factors that may affect the intervention, and factors and actors that may be used to support it.

#### ***6.5.4 The limitations of time available to owner-managers to participate in interventions***

As we have already mentioned, there is a strong focus on operational outcomes within MSEs, and owner-managers often feel they lack the time and resources to prioritise OSH (Ipsen et al, 2015; Legg et al, 2015; Masi and Cagno, 2015), which is also reflected in the amount of time required by the companies participating in the intervention studies. These programmes tend to try to limit the time taken by the intervention as much as possible — for example, only two hours were allowed to design a new workplace for a bakery/pastry workshop (Gardeux and Marsot, 2014). Four meetings of 30–45 minutes were provided to train the manager, and two additional meetings of 30–60 minutes between managers and their employees were allowed in a study by Kines et al (2013). A workshop of five hours was provided for farmers in the study by Morgaine et al, (2006), and meetings of 1.5–2 hours were provided for farmers each month during a year in the work by Stave et al (2008). These studies suggest MSEs spend only a few hours on OSH issues and that recurring activities over time seem to be acceptable. Improvement of OSH conditions may, however, require more than a couple of hours, including recurring activities, for example, for risk assessment, meetings and discussion with staff. Adjusting the time requirements to the MSE is an important part of tailoring programmes to fit MSEs (Legg et al, 2010). It is challenging to include awareness (Morgaine et al, 2006; Samant et al, 2006; Stave et al, 2008; Torp, 2008; Kines et al, 2013), good practice (Bush et al, 2009; Brosseau et al, 2014; Nielsen et al, 2015) and OSH management (Bush et al, 2009; Agnello et al, 2014; Bragatto et al, 2014; Brosseau et al, 2014) within a limited timeframe. Strategies that are based on discussions with peers and workers and provide examples of good practice that can be easily implemented (Bush et al, 2009), as well as providing additional and simple support for OSH management (Agnello et al, 2014; Bragatto et al, 2014), are a way of providing as much concrete support as possible within a limited timeframe.

#### ***6.5.5 Outreach and dissemination***

Reaching out to MSEs and disseminating the message is a core activity of interventions aimed at improving OSH in MSEs. Even with high-quality interventions, evaluations indicate that it can be difficult to reach all companies in a sector. Providing OSH support and tools through the web requires less resource and has the potential to reach a larger audience, although the effect in terms of usage and on OSH conditions has not been systematically evaluated.



As previously noted, most of the intervention studies discussed here were effectively pilot studies in which usually a limited number of companies participated. In addition, in many, only a limited proportion of potential participants agreed to participate — for example, 18% of car repair workshops (Brosseau et al, 2014) and 25% of metal industry enterprises (Kines et al, 2013) — which often resulted in a strong selection bias in the participants. It can be expected that the results in the studies reflect the potential for OSH improvements in the most motivated and knowledgeable companies. An interesting observation is that members of a sector organisation achieved a higher proportion (63%) of recommended improvements than companies that were not members (46%) (Brosseau et al, 2014), indicating that organised companies may be more prone to improve OSH conditions. This limitation of the studies is seldom discussed. However, in relation to implementing similar methods on a broader scale, it can be expected that companies with low motivation and little OSH knowledge may be hardest to reach and may also have little interest in participating in or using the OSH support offered, thus rendering the intervention ineffective in relation to these firms.

*Intermediaries:* As MSEs are generally hard to reach because of their large number and often wide geographical dispersion, findings in the literature show that they can more easily be reached through various intermediaries (Hasle and Limborg, 2006; Hasle et al, 2010; Legg et al, 2010; Olsen et al, 2010, 2012; Sinclair et al, 2013; Cunningham and Sinclair, 2015; Olsen and Hasle, 2015). Common strategies applied in almost all intervention studies and in all countries involve cooperation with some kind of sector organisation (Morgaine et al, 2006; Stave et al, 2008; Bush et al, 2009; Kines et al, 2013; Brosseau et al, 2014; Olsen and Hasle, 2015). In the EU, trade union representatives and workers' representatives have in numerous empirical studies been shown to play an important and powerful role in interventions in small firms (see, for example, Frick and Walters, 1998; Walters, 2000, 2004a, b). Studies from Asia also show how union workers can be important intermediaries in OSH improvements (Tachi et al, 2006).

Facilitators already working on OSH improvements or related questions in the sector are especially important in relation to MSEs (Olsen et al, 2010; Ipsen et al, 2015; Olsen and Hasle, 2015). Other studies indicate that networks among peers can be a very successful way to approach OSH in MSEs (Lehtinen, 2006; Olsen and Hasle, 2015). Using experts or facilitators with good knowledge about the sector increased the credibility of the intervention and made it easier to establish a relationship with the companies in the target group (Morgaine et al, 2006), as well as cooperation with sector organisations and other organisations with whom the target group had already established good relations (Bush et al, 2009). The intervention studies building on intermediaries are usually pilot studies, where a small number of MSEs have been recruited via some kind of cooperation with sector organisations. One study (Morgaine et al, 2006) concerned a national intervention based on cooperation with, among others, sector organisations and authorities.

Olsen et al (2010) analyse how actors may have affected hairdressers', printers' and apple growers' chemical management and conclude that there are already actors that are making demands in relation to chemical management or are in such a position that it is possible to disseminate information but also to demand improved chemical management. These actors, however, vary a lot between the sectors. The hairdressers were inspected yearly by the local city council. Passing the inspection was required to get a licence to operate. The apple growers have an IFP (integrated fruit production) programme with an annual audit, which includes the management of hazardous chemicals (Olsen et al, 2010). Cooperation with actors like these can be an effective way to reach out to MSEs, provided that these actors are willing to include OSH issues in their demands and contacts with their MSEs. These studies, to some extent, also illustrate the possibilities of exploiting the supply chain relationships we have previously discussed in Chapter 2 and which we also discuss in relation to their implications for regulatory strategies in Chapter 5. Unfortunately, as the wider research on the consequences of outsourcing makes plain, in most cases the direction of influence in supply chains is negative rather than positive and results in a poorer experience of health and safety for the workers concerned (see Walters and James, 2011).

There are several challenges when involving intermediaries. These include, for example, ensuring that intermediaries' interests are aligned with those of the OSH programme owners (Olsen and Hasle, 2015) and that those, such as financial advisers, have an organisational or personal interest in promoting the OSH programme (Olsen and Hasle, 2015:250). Cunningham and Sinclair (2015:214) argue that OSH



initiators such as public agencies have to emphasise intermediaries on a par with the MSEs themselves when designing OSH regulation involving intermediaries, and take into account the strengths of intermediaries and build on them when designing intervention programmes. Different studies show how, for instance, accountants (Hasle et al, 2010) and financial and industry advisors (Olsen and Hasle, 2015), among others, can serve as intermediaries.

These examples point to the need to understand the context of the sectors in order to identify potential intermediaries, who may be actors with established relations with the MSEs. Within many sectors it seems to be possible to find intermediaries. But, as Olsen et al point out, it is also important to consider these actors' interests and whether or not their goals are compatible with the intervention. For example, suppliers are interesting, as they often have a long-lasting relationship with MSEs, but they also have a business interest in selling their products or services which might be contradictory to improving OSH conditions (Olsen et al, 2010).

## 6.6 Change process

In this section, we discuss what the research has to say concerning how motivation and drivers affect the change process. It is acknowledged in the literature that managers' motivation is important in terms of prioritising safety (Antonsson et al, 2002, in Stave et al, 2008; Walters, 2003). However, it is not only managers who need to be motivated or feel some kind of pressure in order to take part in and achieve change. Employees and intermediaries also need to be motivated to take part in these change processes, which are often initiated, driven and supported by motivation. But most of the intervention studies reported in the scientific literature do not discuss *how* to motivate MSEs to improve OSH. For an exception, see Kvorning et al (2015), who point out the importance of sense-making and intrinsic motivation.

A mixture of different factors can motivate and drive OSH improvements, as has been shown by Morgaine et al (2006). They interviewed participants in national safety awareness workshops that reached 8% of New Zealand farmers. They concluded that important motivational factors were the feeling among the farmers that their time was valued and that they considered the programme important. External drivers included a perceived threat of prosecution for OSH offences in the future and a perceived possibility of reduced insurance levies if changes were implemented. In addition, active local recruitment, the credibility of the facilitators and the perceived threat of OSH action were the primary drivers for the high attendance across the country (Morgaine et al, 2006; see also Olsen and Hasle, 2015).

In theory, awareness of risks could also be a strong driver. Research about increasing risk awareness and improving safety culture has shown results in terms of a positive change in attitudes (Morgaine et al, 2006; Stave et al, 2008; Kines et al, 2013). The research also shows, however, that, in order to contribute to change, awareness needs to be combined with tools and methods to control the risks.

A further common and recurring motivator and driver identified in the research literature is a belief in achieving risk avoidance and a safer workplace by implementing change (Morgaine et al, 2006; Kines et al, 2013; Agnello et al, 2014; Bragatto et al, 2014; Brosseau et al, 2014). Although not systematically evaluated, this motivator seems to work only if the risks in question are perceived as relevant and plausible by the owner-managers in MSEs and if they are seen as being possible to control (Kvorning et al, 2015). In some studies, the interventions rely on legislation and demands by authorities as drivers of OSH changes, such as in the case of severe chemical risks according to the EU Seveso directive in studies by Bragatto et al (2014) and Agnello et al (2014) or in the use of allergenic isocyanates in a study by Brosseau et al (2014).

Antonelli et al (2006) studied how OSH improvements in the United Kingdom affected elements of business performance as a side effect. Benefits were found to include a mix, such as the maintenance of reputation, client requirements, controlling insurance premium costs, reduction in absence rates, and general improvements in health and safety. In common with other research experience, it was also found that MSEs rarely systematically or comprehensively track the costs and benefits of undertaking a specific initiative, particularly where health and safety is integral to management (Antonelli et al, 2006).

In a recent study conducted on behalf of EU-OSHA (2014), which was not included among those we evaluated, a review of the published evidence on the business case of OSH in MSEs was undertaken along with a small number (13) of additional new case studies. Like Antonelli et al, the researchers found that 'enterprises in the case studies presented stated that interventions were not mainly motivated by the economic return they would provide'. Nevertheless, they further concluded that the interventions they studied were mainly profitable in economic terms, although the scale of such profitability varied. Interestingly in the light of the conclusions to the previous chapter, the study also demonstrated that, for several of the cases investigated, the explicit involvement of workers in the intervention appeared to be an important factor in profitability.

It is not possible to evaluate either to what extent the companies were motivated or what motivator or driver was perceived as the most important one, based on the results presented in any of the studies except the FarmSafe study described above. During recent years, arguing for economic benefits gained through improving OSH has been a mantra often repeated. Although it is hard to evaluate if there are economic gains from improved OSH conditions in general (Cagno et al, 2013:146), case studies describe how economic gains have been achieved as a side effect of OSH interventions (Antonelli et al, 2006; EU-OSHA, 2014). There are few examples in the 15 intervention studies where economic incentives were used to motivate MSEs to improve their OSH conditions. In a programme among New Zealand farmers, a 10% reduction in insurance fees served as an economic motivation (Olsen and Hasle, 2015,) and Legg et al (2010) also mainly investigate the effect of economic incentives. It is, however, not possible to evaluate if these incentives had any effect, as the interventions were complex and included several other motivators and drivers.

How implementation of the change process is expected to take place in the companies is an important part of the programme. The owner-manager in the MSE is usually the person responsible for OSH issues and the key target person for the intervention (Hasle et al, 2010, 2012b; Kvorning et al, 2015; Olsen and Hasle, 2015). OSH conditions cannot be improved without the consent of the manager, which is why reaching out to the manager is highly relevant. The manager, however, is not the only person in the MSE that needs to be approached and involved. As described above, participation of employees is essential. Several studies have shown the advantages of involving employees (Walters, 2003; Crollard et al, 2013; Kines et al, 2013; Masi et al, 2014). As pointed out in Chapter 5, workers' representatives are seldom considered in the programmes.

From these studies it can be concluded that little is known about what motivates and drives OSH changes in MSEs under naturalistic rather than experimental conditions. The results, however, suggest that other factors apart from legislation and risk avoidance are important. Examples from the literature indicate that motivators and drivers may be dependent on the context of the MSE. The organisation of the change process often focuses on the owner-managers of MSEs, and sometimes on involvement of employees, but usually does not discuss the role of workers' representatives or safety representatives.

## 6.7 Conclusions

The review of research presented in this chapter shows that intervention and implementation research regarding OSH conditions and management in MSEs has grown during the previous decade. Intervention studies published in the literature during the last decade provide some interesting insights. However, we have found that empirical studies with systematic evaluation are limited in number and, considering the large variation in sectors and intervention strategies that exist, they provide only fragmented and scattered knowledge. There are only a few solid evaluations of interventions, and the literature provides only limited guidance on how to navigate the extremely complex context in which OSH in MSEs occurs. In this concluding section, we briefly summarise what seems to be the state of the art, based on the insights gained here and in the older literature — briefly summarised in the introduction to the chapter — and outline some of the implications for future research of both what is known and what is not known.

### 6.7.1 *What works, for whom and in which contexts*

Generally, the studies from the last decade confirm earlier findings pointing towards tailoring interventions to the needs of specific target groups of MSEs. The recent literature indicates that there are many different ways of doing this. However, in this new literature, there are hardly any discussions at all about how to tailor interventions and how the specific interventions have been tailored to the target group and their context. At best, there may be short comments in the discussion section on how the outcome was affected by the needs and conditions of the target group and its context. The lack of such information makes it difficult to conduct a meta-analysis of what works, for whom and in which contexts. This kind of information may, however, be accessible through discussion with the parties involved in the intervention, but seldom in the scientific literature. So there is a strong need for further research that deals explicitly with these issues.

There are several examples that show that building on general good practice in arrangements for health and safety serves as a good point of departure. The time constraints and the restricted resources typically faced by MSEs suggest that disseminating such good practice has an advantage compared with more complex and time-consuming methods. However, it is further clear that good practice needs to be supplemented with other methods to raise awareness and to help identify and evaluate risks and solve problems that cannot be dealt with solely through such good practices. Depending on the target group and their OSH conditions, it may, however, be necessary to highlight certain activities, such as management routines for Seveso plants experiencing severe risks or good practice for sectors that have similar processes and OSH problems.

The research also confirms that interventions empowering managers and supporting employees' participation in OSH arrangements are effective. Employees' participation is often achieved through personal support and discussions within MSEs, typically in combination with some kind of training — always in a design adapted to meet the demands of the MSEs. However, there are resource implications for this kind of programme, which often limit the extent of their implementation and up-take. In Chapter 5, labour relations are discussed, and it is shown that workers' situations in MSEs differs between EU Member States, so the national setting is important for employees' participation regarding OSH issues. This has, however, not been discussed in the intervention studies, but is one contextual condition out of several that has to be considered when designing intervention programmes.

Overall, there are many gaps in our present knowledge. They are of sufficient magnitude to mean that it is at present not possible to fully or adequately address the questions posed by realistic evaluation concerning 'what works, for whom and in which contexts'. In the following sub-section we therefore use the opportunity to summarise what present knowledge suggests concerning future research necessary to enable better engagement with these questions.

### **6.7.2 Research gaps**

When analysing the intervention studies, it is striking that most deal with only parts of what is needed to implement improved OSH. For example, they might focus only on risk awareness, on evaluating a tool or a training course or on expert support in a particular sector and under a particular (often unstated or incompletely stated) set of circumstances. Typically they do not include a wider discussion on how to reach out to MSEs or even on whether or not extending the dissemination of the programme they address is possible. The researchers have apparently not been interested in these issues. Very often the aim of the intervention being reported by the study is governed not only by the needs of the sector, but also by the interests, funding and competence of the researchers. Of course it is also easier to design an intervention study that deals with only one or a few aspects of OSH processes, despite knowing that multi-factorial interventions are the most effective ones (Hasle et al, 2012a). None of the intervention studies we have reviewed describes the entire chain of the intervention; however it is conceived by the approach of realist evaluation to include motivation or drivers for change for the target MSEs, provision of tools to support OSH improvement, dissemination strategies to reach out to more than a selected test group and evaluation of effect, and, importantly, the contexts in which all this occurs.

In addition, even within the constraints defined by the interventions themselves, as we have noted, they are often not effectively evaluated (Hasle et al, 2010). There are also examples of interventions that are discussed (e.g. Agnello et al, 2014; Bragatto et al, 2014, 2015; Brosseau et al, 2014; Parker et al, 2015)

each reflecting a specific and limited research question related to the same interventions. This fragmentation of knowledge contributes to the absence of a holistic view on the strategies needed.

Overall, there is an increasing volume of research evidence concerning elements of various kinds of concrete interventions, but from this research we know little about how interventions can be transformed to a broader context and implemented in sector or national policy programmes. This suggests that there are serious gaps in our knowledge on OSH interventions in MSEs and some of the factors that explain them are discussed in the following paragraphs.

*Mainly pilot studies:* Interventions have mainly been the target of pilot studies testing specific methods and tools, with few exceptions.<sup>40</sup> Pilot studies often have specific resources at their disposal, which are no longer available when attempts are subsequently made to transfer the studies to general policy programmes. These often operate as an integrated part of the activities carried out by intermediaries, such as sector organisations and authorities. Assuming that the aim is to scale up interventions to reach out to a larger group of MSEs — for example, in the entire sector in a country — it is interesting to reflect on what resources are usually available and what resources are needed for different kinds of approaches. Cost and possibilities for up-scaling have not been studied or even discussed in most of the studies. Some of the approaches, such as those that rely on expert visits to companies, for example, are likely to be very difficult to apply in a wider context, due to their cost. These issues and how to make the results of interventions more widely available are not discussed. The result is often that improving OSH in MSEs is treated as though it was a time-limited campaign, when clearly what is necessary are methods and strategies that provide sustainable improvements in both OSH conditions and management.

*The interest and motivation of participants in research studies and their investigation:* Pilot studies usually recruit companies that are willing to participate, and the evaluations show that in many cases only about 20–25% of invited companies participate. These participants are likely to be more interested in OSH issues than the average company in the sector, which gives a problematic self-selection bias, making results of dubious quality with regard to their generalisability or potential for wider transfer.

Gaps in the research show there is a need to develop knowledge about how to motivate MSEs and what exactly drives them to improve their OSH arrangements. There is also a need to increase understanding of how these motivators and drivers work in relation to different conditions and contexts. These issues are generally not discussed at all in the intervention studies, and if or how it is possible to reach out with a particular intervention and improve OSH conditions in the companies that perform poorly is largely ignored. But this is of course a key question. Whether it is a task for voluntary intervention activities or for the regulatory authorities may be a matter for discussion. There is clearly a need to better understand whether poorly performing companies can be reached with an intervention and, if so, what methods are most effective in achieving this. In this respect it is important to note that to the best of our knowledge intervention studies do not focus on the role of regulation and inspection. As we saw in the previous chapter, such regulatory activity itself may be influenced by and responsive to wider elements in the political and economic landscape that provides important contextual determinants, also rarely mentioned in the intervention studies that feature in the OSH literature.

*How effective are web tools developed to support change?* Tools, methods and materials available through the web may be effective, but systematic evaluations about how such material should be designed and disseminated in order to be successfully applied are still lacking. Obviously this material can face the same problem of self-selection in as much as only the motivated firms will seek this information unless it is integrated into, for example, daily routines or administrative systems.

*How reliable are questionnaires for evaluation of interventions?* Quantitative evaluations of interventions are often undertaken using questionnaires. However, there are some well-known serious limitations of this method when it is used to understand change. For example, it measures current knowledge when an intervention being studied may have caused changes in participants' conceptualisation of standards (Westlander, 2003, in Stave et al, 2007). Even more obviously, answers to questionnaires may

<sup>40</sup> Such exceptions include the FarmSafe programme in New Zealand (Morgaine et al, 2006; Olsen and Hasle, 2015), the prevention package programme in Denmark (Hasle et al, 2012a; Kvorning et al, 2015) and the regional OSH representatives programme in Sweden (Frick and Walters, 1998; Frick, 2009).

overestimate the level of what respondents *think* they know but not necessarily what they are required to know. For example, Olsen et al (2010) demonstrated this in their study on chemical risk management, where the responses of managers overestimated their knowledge and routines, mainly owing to their lack of actual knowledge and understanding of the health risks involved and what was required to address them. Moreover, responses to questionnaires evaluating a free tool or service (such as some kind of support regarding OSH), where the participants have chosen to continue participating or using the commodity, are probably biased. Those who are critical towards the intervention will probably exit, leaving the most positive to answer the post-intervention questionnaire. There are further examples of questionnaires being used inappropriately, such as in the case of companies that have received financial support to improve OSH conditions (Carrillo Castrillo et al, 2012), where there is clearly a vested interest in replying positively to them and where, therefore, how objective such an evaluation of the programme would be is questionable. In short, in many cases, as is also clear from other areas of social science research, mixed methods combining quantitative findings from questionnaire-based surveys that are supplemented with more detailed qualitative interviews may help to increase the validity of results (see, for example, Olsen et al, 2010).

*The nature of risk:* It is important to note that most intervention research has focused on support for addressing what are fairly conventional OSH risks. There would seem to have been very little work specifically concerned with how the management of new and emergent risks can be better supported through intervention. This is perhaps surprising given the acknowledged growth in, for example, psychosocial risks in recent decades, and their at least partial attribution to the same changes in the structure and organisation of work that are also seen to increase the vulnerability of workers in MSEs. At the very least, therefore, this represents a gap in research that requires some serious attention.

*Tailoring and benchmarking interventions:* Increased understanding of and methods for tailoring interventions and how to adapt them to the conditions and contexts of MSEs is needed. This includes knowledge about intermediaries interested in and able to support OSH improvements. Many of the reported examples illustrate how difficult it is to reach out to MSEs and improve their OSH conditions. Considering this, benchmarking with previous studies can provide indicators for new studies, thus building a better understanding of ‘next steps’.

*Inspection and control:* As noted, a major omission from existing intervention studies in the OSH literature are studies addressing the effect of regulatory inspections and control of OSH in MSEs. This confirms our observations in the previous chapter — where we indicated that, while in some Member States there is a substantial variety of strategies and methods for regulatory intervention adopted in regulatory policies and directed at MSEs, there is at the same time very little knowledge of the use and effect of such strategies. Clearly, a better understanding of the outcomes of different methods is desirable. In addition, from a resource perspective, it is further desirable to develop an understanding of how and in which contexts different strategies could be combined in order to develop cost-effective strategies.

### **6.7.3 A challenge for future work**

In summary, this chapter demonstrates that, while there has been a burgeoning of the literature concerning the evaluation of intervention in improving health and safety arrangements and outcomes, the knowledge gained is patchy and incomplete and adds little that is fundamentally new. It is also the case that quite a lot of recent research seems to have taken place within disciplinary silos that result in a failure to learn from or apply knowledge gained elsewhere. This would seem to suggest a need among researchers for both greater awareness concerning the state of existing knowledge and greater aptitude and skills to make cross-cutting connections between different bundles of knowledge in order to build more effectively on what is already known. None of these tasks is easy. They are not helped by the substantial differences between the literature that focuses on specific intervention at the level of the workplace and the literature that presents an analysis of factors in the wider economy that drive and determine the conditions the intervention is seeking to address. Moreover, the complexity of interventions is difficult to deal with in combination with quantitative evaluations of effect and outcome, as there are bundles of more or less known factors that potentially affect the outcome of an intervention.



In addition, qualitative evaluations are difficult, as the factors that may have an effect on the outcome depend on the context and may vary a lot between different target groups, thus requiring a profound understanding of the intervention and its conditions and context. In conclusion, therefore, it is clear that, while it would be unwise to underestimate the challenges for future research, it would be equally unwise to ignore lessons from previous research indicating the gaps that need to be addressed.



## 7 Conclusions and implications for further study

The review presented in this report has explored rationales, mechanisms and realities shaping the experience of OSH for workers in MSEs in the Member States of the EU in ways intended to be useful for both science and policy. It has been informed throughout by two central aims. The first has been to review current knowledge concerning the experience of arrangements and outcomes in relation to OSH in MSEs and the strategies in place to support and improve them. The second aim has been to consider the implications of gaps identified in this knowledge for future research — in particular for the future research to be carried out within the brief of the wider project commissioned by EU-OSHA concerning ‘Improving OSH in micro and small enterprises in Europe’, of which this review is the first part. In this concluding chapter, therefore, we outline the key findings of the review. We then consider their implications for policy and research. In the case of the latter, we present conclusions based on the content of previous chapters concerning the quality and validity of recent research on OSH in MSEs, the limitations of this work and the gaps in knowledge thus identified. Finally, we discuss the implications of these conclusions for the framing of future empirical research.

### 7.1 A summary of the findings of the review

The review explored several related issues relevant to OSH in MSEs in the EU that are addressed in the research literature, including a descriptive analysis of their position and role in the economy and economic policies of the EU and its Member States; current knowledge concerning measures of health and safety outcomes in these enterprises and the arrangements they make to protect their workers from such outcomes; recent analysis of reasons for the success and limitations of such arrangements; and analysis of research concerning the effectiveness of interventions, at various levels, aimed at supporting their improvement.

A distinctive feature of the literature reviewed in the preceding pages is found in the paradoxes it exposes. For example, starting with a broad outline of the significance of MSEs in the economy and economic policies of the EU in Chapter 2, it is immediately striking how many sources describe them as a significant element of the EU economy — as indeed they unquestionably are when measured in terms of their numbers — but, at the same time, other ways of measuring a wider range of variables (such as their share of employment, value added and profitability) reveal a more complex picture in which their economic prominence is less obvious. This contrast serves as a reminder of MSEs’ role in supporting the performance of larger organisations, where, for example, these organisations have outsourced work to smaller companies that perform contracting and subcontracting roles. This is seen, for example, when cost and risk burdens formerly borne by the larger firms are assumed by their contractors, and improved ‘business efficiencies’ are achieved by the larger organisation as a result. It is also a further reminder that in many such situations the consequences of such risks are often invisible to systems for reporting and recording, because they fall outside their remit (see, for example, Thébaud-Mony’s work (2011) concerning the low levels of reporting of confirmed cases of occupational cancer recorded among subcontractors in the French nuclear industry).

Similarly, some accounts of the role of MSEs in the economy focus on enterprises especially active in high value-adding activities, often also investing in undertaking organisational and networking practices (such as engagement in training or in regional associations of mutual interests), which help promote their success and sustainability. Such accounts tend to present MSEs as entrepreneurial success stories and significant players in revitalising economic growth. In contrast, other accounts characterise the activities of many MSEs essentially as ‘low road’ survival strategies in which poorly resourced businesses operating somewhat on the margins of the economy tend to situate themselves in markets with low entry barriers, such as in low-profit niche markets, where they often function as subcontractors to larger companies in relation to which they have little decision latitude. Further accounts portray work in MSEs as highly rewarding, socially integrated, flexible and varied, undertaken from choice by individuals with strong skill sets, and commanding not insignificant labour market power, while others suggest a preponderance of poor-quality jobs undertaken by relatively poorly educated or otherwise disadvantaged workers with low skills, significant vulnerability and insecure employment.

Of course these polarised views of MSEs are to a large extent explained by the heterogeneity acknowledged to characterise them as a group, which is such that both these extremes are found among the spectrum of business and employment scenarios they inhabit. Such heterogeneity indicates a need for caution before generalising about their nature. However, some broad categorisations are important and necessary if policies concerning them are to be effective.

In the case of the health, safety and welfare of workers employed in MSEs and the arrangements made to protect them, it is important to recognise that, as is made clear in Chapters 2 and 3, there is strong evidence that a substantial proportion of work in small firms takes place in firms which are typical of those pursuing 'low road survival strategies', and many operate in sectors traditionally regarded as presenting high risks of physical injuries and ill-health. As Chapter 3 also shows, there is further strong analytical evidence that the result of this situation is a disproportionate level of fatal accidents and serious injuries associated with work in smaller enterprises. The indications of the effects of this work on work-related health are less easy to analyse for a host of confounding reasons. Nevertheless, the conclusion reached in the present review is that there is nothing in the direct evidence of the occurrence of work-related ill-health to suggest that poor health outcomes are less frequently the result of work in smaller enterprises than larger ones in comparable sectors — and there is much indirect evidence to indicate that these outcomes, like fatalities and serious injuries, may be greater in smaller firms. Moreover, our analysis of the evidence on the quality of jobs in these types of workplaces, also discussed in Chapter 3, does not support conventional notions concerning greater job satisfaction in smaller firms. It suggests instead that there are greater proportions of poor-quality jobs in these workplaces than in larger ones. When possible reasons for these findings are explored in later chapters, several become apparent. One of the first notable findings of Chapter 4, for example, shows that the analysis of recent EU-wide survey findings on OSH management arrangements in workplaces consistently demonstrates, for a range of measures, that these preventive arrangements are considerably less well developed in smaller workplaces than they are in their larger counterparts, and this holds true regardless of sector or country.

Moving on to the analysis of the reasons that explain these differences, in the remainder of Chapters 4 and 5, we have reviewed research concerning the 'structures of vulnerability' inhabited by workers, owners and managers alike in many such smaller enterprises, concluding that there are a set of socio-economic and regulatory factors that act in concert to raise the risks to health and safety experienced by workers in these firms to levels greater than those experienced in larger enterprises in comparable sectors.

In Chapter 4, we concluded that there were numerous studies reported in the OSH research on practice in MSEs and on the understandings of their owner-managers, identifying reasons for the poor uptake of arrangements for managing OSH in these enterprises. These include the weak economic position of many MSEs and the low investment they are able to make in OSH infrastructure; the limited knowledge, awareness and competence of their owner-managers in relation to both OSH and its regulatory requirements; their limited capacity to manage their affairs systematically; and their attitudes and priorities, given the limited resources at their disposal and their concerns for the economic survival of their business, in all of which OSH has a low profile. The combined effect of these weaknesses, which determine the low uptake of appropriate preventive arrangements within the substantial proportions of such firms that are found in hazardous industries, leads in turn to the comparatively poor OSH outcomes with which research has shown them to be associated.

In Chapter 5, we explored these underlying weaknesses further by examining the research on workers' experiences, labour relations and regulation in relation to OSH. We found that the 'general and multifaceted lack of resources' that determines poor OSH in MSEs is itself an aspect of similar challenges confronting the wider social, economic, regulatory and labour relations issues in which this experience is embedded within many MSEs and within the structures and business relations in which these MSEs are situated. A focus on wider literature addressing these matters helped draw attention to the heterogeneity of MSEs, not only in terms of their institutional variety, but also in terms of the varieties of experience within them and, especially, to the often very different experiences of workers from that of their employers in these firms.

We further concluded that research on the regulation of OSH in MSEs painted a portrait of generally limited engagement and weak compliance practices on the part of owner-managers in these firms, in which those relating more specifically to poor OSH practice were situated. Again, however, the situation presented by the literature is complex, and the heterogeneity of MSEs makes for a mixed picture. We noted typologies found in the literature that attempt to describe the range of compliance behaviours and the reasons for them, which confirm that many MSEs pursue 'low road' strategies towards their survival, among which harmful exposures for their workers' health and safety are likely to be disproportionately experienced and, moreover, it is often among such firms that the regulatory and socio-legal research identifies a greater prevalence of behaviours of non-compliance. We found the wider literature on regulation to have identified an emergent set of regulatory strategies with the potential to address the challenges presented by these firms, which parallel current understanding in the academic literature concerning the advantages of regulatory mixes in new approaches to economic governance and regulation. While we conclude that these may indeed have considerable potential for addressing the challenges posed by MSEs and their structural situations, we also note in Chapter 5 that, to date, the research evidence for their success is very limited indeed.

The strong conclusion that emerges from our analysis presented in Chapters 2 to 5 is, therefore, that for workers who are employed in a substantial proportion of micro and small firms there is good reason to be concerned about the arrangements made for their health and safety and the adverse outcomes they face as a result of the limitations evident in these arrangements. This is a concern that applies to a greater or lesser degree across all the Member States of the EU and gives little reason for complacency among any of them.

Turning to strategies to support the development of appropriate arrangements for OSH in MSEs, in Chapter 6 we reviewed recent research evidence of the role of intervention, and using the approach of realist evaluation we sought to discover the extent to which this research added to knowledge concerning 'what works, for whom and in which contexts' in relation to improving OSH arrangements and outcomes in MSEs. We found some evidence concerning the effectiveness of specific interventions, but overall our review showed that the research in this area remains quite weak in its analysis of the contexts in which interventions take place and concerning their potential for transfer, leading to the conclusion that, despite a burgeoning literature addressing various specific interventions, there remains much room for further evaluation of these wider issues.

In conclusion, therefore, we find that there is a body of research that details both proximal and contextual reasons explaining the poor OSH outcomes associated with work in a substantial proportion of MSEs in the EU. Moreover, lessons from intervention studies are helpful in informing what works in relation to specific approaches to improving arrangements within enterprises. However, the narrow focus and limited degree of contextual analysis in most studies of specific interventions implies a need for a better understanding concerning both the economic and the social relations within and around MSEs that determine outcomes. And, *of equal importance*, a similar better understanding is required concerning the determinants of the nature and role of policies and strategies which also serve to influence arrangements and outcomes within MSEs at sector, national and European levels.

This returns us to the question of the contradictions in the literature mentioned previously. It is apparent from our reviews in Chapters 2 and 5 that economic and regulatory policies in place both at EU level and in the Member States are somewhat polarised in their approach to MSEs. As we have outlined in Chapter 2, the broadly neo-liberal and supply-side orientation of the dominant economic policies in the EU and its Member States during recent decades positions MSEs as fairly central to economic growth and attempts to enhance this role with support from economic and regulatory policies aimed at promoting flexibility and removing what are regarded as unnecessary constraints on business. This would seem to have two main effects. While it may contribute to increased freedoms to ignore OSH rules, it also creates a situation that arguably contributes to the 'low road' strategies pursued by a large proportion of MSEs, which in turn create the conditions for poor OSH arrangements and outcomes. Further, it undermines the implementation and effectiveness of strategies and processes that are known to ameliorate these effects. For example, in the case of public regulation and MSEs, we can observe the emergence of some curious and paradoxical effects. Regulatory measures to protect the health and safety of workers employed by MSEs are frequently regarded by economic policy-makers as being

among the constraints on business growth and there is, therefore, pressure to seek the exemption of MSEs from many such measures or for the modification of the application of these measures in relation to MSEs. At the same time, regulatory scholars claim that other regulatory measures that are designed to encourage employers to take a more active responsibility for assessing and managing the risks to their workers' health and safety themselves (the so-called 'regulated self-regulation' that characterises shifts in regulation in the EU in recent decades) have limited impact in MSEs because they pre-suppose the existence of essential preconditions for their effectiveness that, as we showed in Chapter 5, are simply not present in smaller firms.

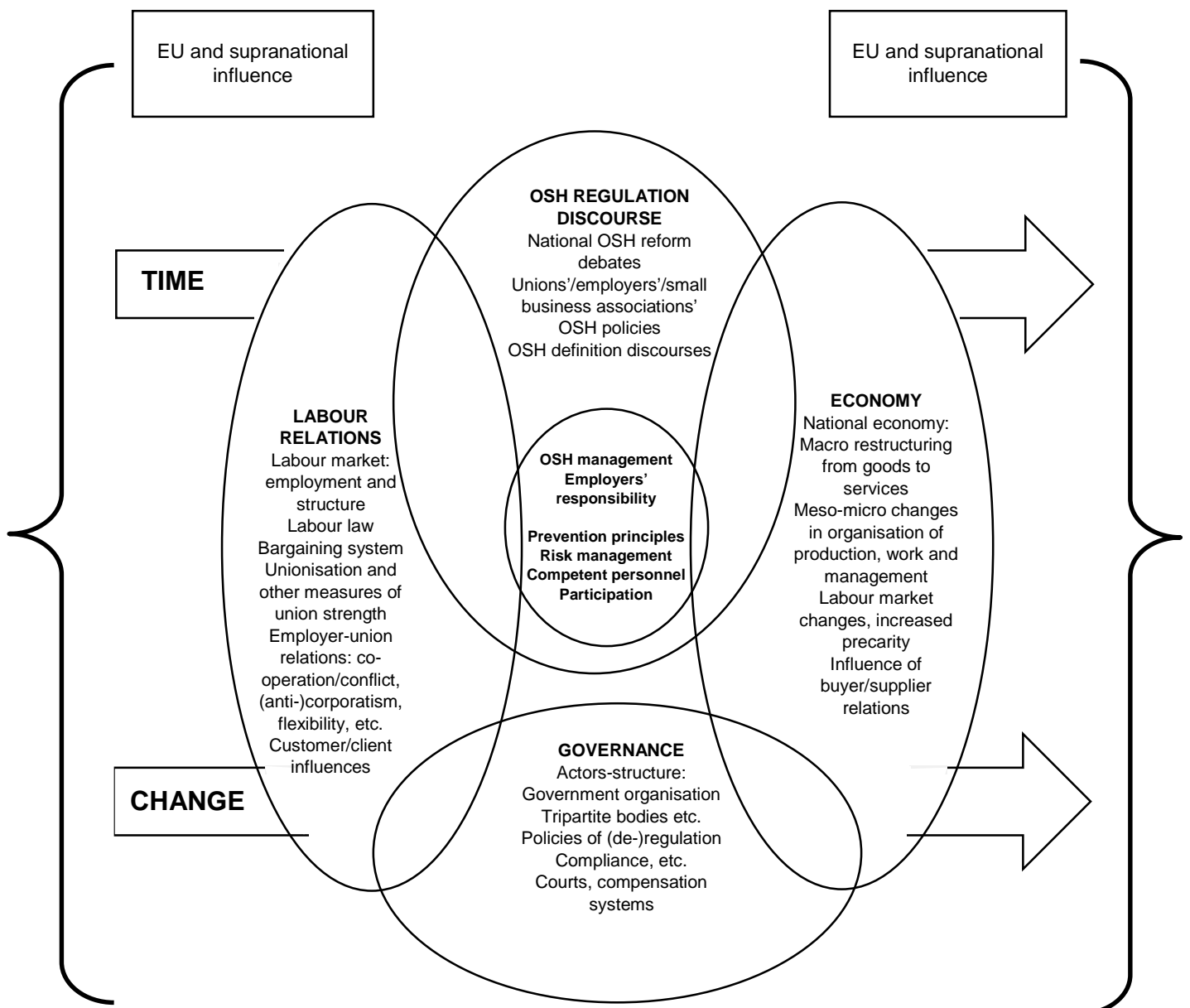
Therefore, at one end of the recent policy spectrum are found a host of deregulatory policies aimed at either removing regulations, exempting enterprises below a certain size from their coverage or modifying their application to these firms. Such approaches are set within the aims of wider neo-liberal policies that aim to reduce the regulatory role and institutions of the state more generally and to encourage the growth of market and other forms of private regulation in taking over this role. As a result, many of the institutions of public regulation, including those established to ensure surveillance of measures to protect workers' health and safety, have reduced in size and coverage in recent years and at the same time they have been obliged to direct their diminishing resources at increasingly complex and divergent scenarios that are subject to regulation, as the effects of the same neo-liberal economic policies make for increases in their prevalence by encouraging and supporting outsourced, fissured and fragmented organisation of work in the restructured and reorganised economies of the EU.

These developments present regulators — who remain charged with ensuring compliance from duty-holders in MSEs and who frequently occupy positions at the other end of the polarised policy spectrum to that occupied by economic policy-makers — with something of a challenge to their regulatory ingenuity. Moreover, they are obliged to meet such a challenge with fewer resources available to them than was previously the case (see, for example, Cardiff University et al, 2011; Walters et al, 2011; Tombs and Whyte, 2013). Wider research on regulation reviewed in Chapter 5 makes clear that the supposed market and private forms of regulation often advocated by neo-liberal economic policies have only limited impact in relation to MSEs that have neither the will nor the capacity to implement them themselves and are generally subject to pressures from customers and buyers in larger organisations higher up in supply chains. Where price and delivery demands dominate market regulation and long supply chains prevail, research on compliance behaviours has shown that the absence of a strong presence of public regulation in combination with the remoteness of the subjects of regulation from inspection helps to obviate the need for larger organisations to be concerned about the regulatory or reputational risks of their exploitive business strategies in relation to MSEs situated at the ends of their supply chains. The research literature advocates means to address these challenges through the introduction of regulatory mixes, for example, by placing duties on the heads of supply chains, combining market-based incentives with regulatory duties, greater strategic use of means to heighten reputational risks, and so on, as well as through more innovative ways of seeking compliance from 'hard to reach' duty-holders such as those in small firms. However, here again we have concluded from our review that the evidence of the extent to which such approaches are currently in use and how effective they are is very limited indeed.

Shifting our focus from fairly generic perspectives concerning the experiences of OSH in MSEs in EU Member States to a more comparative assessment, another conclusion from this review is that differences (and, therefore, presumably the reasons for them) between arrangements and outcomes that can be related to the size of enterprises also vary between Member States. That is, although surveys show that there is a common size-related pattern in measures of the extent of the presence of arrangements for health and safety in enterprises throughout the EU, and there also appear to be shared size-related effects on outcomes such as fatalities and serious injuries across the Member States — as well as further size-related effects on working conditions, job quality and workplace exposures to certain hazards that are also widely shared — the magnitude of this experience varies among Member States. This variation is not restricted to MSEs but occurs across all enterprise size ranges, suggesting that national contexts are also important determinants of workplace arrangements and their outcomes. We have found such comparative analysis of the wider determinants of OSH arrangements and outcomes to be rare in the literature that addresses OSH issues directly and, consequently, here again we have been drawn to the wider comparative literature concerning the economy and the structure of work,

regulation and public administration in EU Member States. In the present review, following the practice in previously published research, we grouped Member States into clusters sharing features in common in their regulatory systems, economic profiles, labour relations practices, and so on, which in turn led to features in common in their health and safety systems. In Chapter 4, we examined differences in the uptake of arrangements for managing OSH between these clusters of Member States. While there were exceptions, the broad pattern, repeated for each of the measures of the presence of these arrangements, showed that those Member States in which regulatory requirements focusing on processes of OSH management were of the longest standing generally scored higher than those in which such requirements were of more recent origin. This of course is a serious oversimplification of a complex situation, the outlines of which we have tried to capture in Figure 7.1.

**Figure 7.1: The context of OSH arrangements in small and micro firms (adapted from EU-OSHA, 2013:57)**





The figure, which was originally developed as part of a study that used secondary analyses of ESENER-1, seeks to demonstrate that the effects observed in the analysis of the more recent survey data (ESENER-2), which were outlined in Chapter 4, are unlikely to be explained simply by the longevity of the shift from prescriptive to process-based regulation in each Member State. They may, however, be better understood by further exploration of the underlying determinants driving such change and the roles played by economic actors, the state and civil society in bringing it about. For example, other elements of the system in which OSH arrangements in MSEs are embedded include the support provided by national institutions for education, research, training and information dissemination in relation to OSH; OSH services, professional practitioners, their institutions and the like; the courts and legal services and compensation litigation; social security and social welfare systems addressing issues of compensation, rehabilitation and return to work; trade associations, employers' organisations and trade unions, and the services they provide for their members on health and safety matters; insurance associations; public advice centres and information services; and so on. These in turn relate to the wider systems for economic, health and social welfare, including the wider roles of the main institutional actors such as employers' organisations, trade bodies, trade unions and the state apparatus for policy-making and its delivery in relation to health and safety at work. In addition, as we demonstrated in our review in Chapter 2, the nature of the economy and of economic policies and what determines them are all also likely to be strong influences on the presence and form of arrangements for OSH in MSEs. The literature reviewed there suggests, for example, that there are differences between the capacities of MSEs in Northern and Western Member States to respond effectively to business challenges associated with globalisation and those in MSEs in Southern and Eastern EU Member States, which in turn may influence the proportions of such firms pursuing 'low road survival strategies'. Such differences are unlikely to be solely the result of innate features of MSEs in different Member States, but that of the interaction between owner-managers and workers in these enterprises and the social, political, regulatory and economic contexts with which they are surrounded. While research has focused on the consequences of these changes on collective bargaining and wage determination, there is clearly a need for a better understanding of these influences on both OSH arrangements and their outcomes if the likely effects of EU-wide policies to support MSEs are to be better understood. Here again this implies a need for more in-depth comparative study of these issues within and between EU Member States and we turn to a discussion of some of the implications of this in the following section.

## 7.2 Improve quality and mind the gaps — implications for further research

This review has sought to establish the extent of current research-based knowledge concerning OSH arrangements and outcomes in MSEs and the contexts in which these occur in the Member States of the EU. It suggests implications for further research that are essentially of two main and related types. Firstly, it seems clear that a number of gaps exist in the present knowledge base concerning OSH in MSEs in the EU that might be usefully explored in future studies. Secondly, the review has also indicated that there are a number of issues of the quality and coverage of research that could be fruitfully addressed in future studies. We consider these implications in more detail in the following sub-sections, based on the findings in each chapter of the preceding review.

### 7.2.1 Analysis of quantitative outcomes

Chapter 3 concluded that long-established and robust analysis provides strong evidence of an inverse relationship between establishment size and rates of serious and fatal occupational injuries, and sufficient circumstantial evidence to suggest a similar inverse relationship may exist between size and good performance for exposures associated with other types of injuries, work-related ill-health, the quality of jobs and the work environment. However, the quality and availability of the evidence reviewed in Chapter 2 makes the latter relationships less easy to substantiate, especially as scrutiny moves from 'hard data' — such as records of fatal accidents or measures of exposure — to more socially constructed indicators — such as those of lost-time injuries, self-reported perceptions of work-related ill-health, exposures to hazards or job quality. There are further indications that both the availability and the quality



of these data and their analyses varies between Member States within the EU and there are alarming signs that the national surveys that generate these data are declining in both number and quality. Indeed, for the majority of Member States, no such analysis exists. Instead, there are aggregate statistics of dubious quality and comparability. This has a number of implications for future research, as better and more reliable knowledge and understanding of establishment size-related effects on the situation concerning work-related health, work environment and job quality would obviously be advantageous. Given the policy issues outlined in the previous section, and especially the challenge of achieving an appropriate balance of support for the role of MSEs in the economies of EU Member States while at the same time protecting the health, safety and welfare of the millions of workers employed in them, the question of accurate and reliable analysis of OSH outcomes associated with work in them is important. But it is important to consider not only how data can be accurately and reliably collected, but also how they can be analysed more innovatively and in ways that would provide more detailed knowledge and understanding concerning the consequences of exposures in MSEs to the burden of work-related harm. For example, knowing how many people have been killed or are suffering from a particular condition tells us about incidence, but extending this to consider, for example, years of life or years of productivity lost, and the fraction of this that is attributable to work in MSEs, provides a significantly greater depth of understanding of the burden of negative major health outcomes related to work. This might be further detailed by looking more specifically and separately at, for example, occupational injuries, occupational cancer, work-related cardiovascular diseases, musculoskeletal disorders, stress, and so on. While this is an area of analysis that is not new, and such techniques are nowadays widely employed on the analysis of public health indices, they do not appear to have been applied to data in which MSEs are considered.

The reviews presented in Chapters 2 and 3 suggest that extrapolation from past analysis and comparison of available current aggregate data at EU level indicate that a substantial proportion of workers in MSEs are employed in situations in which risks to their safety and health are elevated by a combination of inadequate arrangements made to protect them in scenarios in which there are significant hazards. This is found particularly in enterprises that for a host of reasons occupy positions in the economy in which they pursue so-called 'low road' strategies to ensure economic survival. However, there are clearly other MSEs in which less hazardous work is conducted and also those where 'low road survival strategies' are eschewed in favour of those leading to greater business success. Moreover, there are some suggestions in current prevention research — which we discuss in Chapters 4–6 — that within this group risks may be better managed and OSH outcomes may be improved as well as linked to business success. However, accurate data on all these matters are not forthcoming. We do not have the full information on the relative sizes of the populations in question, or on the risks involved. Nor do we have precise information on the extent to which arrangements to manage these risks are the reasons for better outcomes or how much they are the result of less hazardous work. Therefore, there are opportunities for further study of all these matters, which would be facilitated by more in-depth and comparative analysis of quantitative data reflecting sector and national experiences. Such studies would allow follow-up of the overview of outcomes presented in this report with more in-depth comparative research using available indicators of national and sector experiences of enterprise size-effects on OSH from a limited but representative sample of EU Member States.

### **7.2.2 Learning more about arrangements**

As Chapter 4 shows, the poor outcomes in MSEs are linked in previous research with findings suggesting that a substantial proportion of these enterprises are unlikely to invest significantly in hardware to achieve engineering or infrastructural solutions to health and safety problems, or to have procedural arrangements derived from process-based regulatory requirements for health and safety in place. The same studies show this to be also the case in relation to the limited awareness of owner-managers concerning such requirements. In Chapter 4, these findings were supported with an analysis of data from ESENER-2, which offered some quantitative confirmation of the existence of an inverse size effect in relation to the presence of measures of OSH management arrangements. The analysis further showed that, while these size-related effects were ubiquitous, they nevertheless varied in intensity between Member States.

Therefore, taking account of the prominent findings of the specialist OSH research and our own analysis of recent EU-wide surveys, we conclude that there is strong evidence of the limited application of mandatory requirements for health and safety arrangements among MSEs and there is some analysis of the reasons for the limited capacities of these firms to implement such arrangements effectively. However, in Chapter 4, we also suggested that issues of context and environment originating outside workplaces, or as part of wider social and economic relations of work within workplaces, were probably important in determining the extent of arrangements for OSH as well as also being responsible for the differences in the presence of these arrangements in MSEs in different Member States. These are issues that our review has found to be explored only to a limited extent by the specialist OSH research and they would benefit from further empirical investigation and comparative analysis. To do so requires careful research design and choice of appropriate investigative methodologies. Qualitative data will need to be collected from workers and their employers, but also from others involved in the relations summarised above. At the very least, these will include regulators and their inspectors, as well as other intermediaries and the suppliers, buyers, trade unions and interest groups with which the MSEs that are the focus of empirical study are involved.

### 7.2.3 Understanding contexts

To help further knowledge and understanding of these matters, we think there are good reasons to move beyond the limited perspectives found in much of the specialist OSH research on MSEs, which tends to be largely framed in terms of the interests and experiences of owner-managers. In Chapter 5, therefore, we turned our attention especially to the experience of work and labour relations in MSEs and understandings in the research and academic literature concerning the influence of governance and regulation on these workplaces. In so doing, we aimed our focus ‘upstream’ in order to develop our analysis of the determinants of practice and outcomes for OSH in MSEs. In taking this approach to the review, we found there to be a range of incomplete understandings evident in previous research concerning these determinants, which we concluded would benefit from further empirical study.

To begin with we have argued that new research needs to take better account of the quality of *workers’ experiences* in relation to OSH in MSEs, as well as those of owners and managers. There are lessons to be learned in this respect from the extensive portfolio of qualitative study found in the sociology and ethnography of work, as well as in, for example, economic sociology. This is not to suggest that owner-managers need to be studied less — previous specialist OSH research has quite rightly identified their pivotal role, which has not diminished. Nor does it mean that the business and economic contexts of small and micro firms can be ignored. Furthermore, it does not suggest that all of the methods used in new research need be sociological or ethnographic. But it is important to acknowledge that the serious study of the contexts and determinants of *workers’ experiences* has been neglected in previous work and to remedy this effectively requires an appropriate conceptual framework and methodology that we have found to be missing from much specialist OSH research. Such study should be a prominent part of future research and, as in the case of providing better understanding of OSH arrangements discussed above, there are significant implications here for research design and the choice of appropriate investigative methods.

It seems likely that the most profitable approach for future empirical studies might be to adopt a ‘mixed-method’ strategy for data collection and analysis in which steps are taken to ensure the experiences of workers are captured. Alternatively, it might be argued that combining qualitative (interpretive) and quantitative (positivist) approaches to field studies would mix incompatible epistemologies and reduce the value of both approaches. In which case, both kinds of studies are required and they need to ‘speak’ to each other in order to gain a proper understanding of the reality of OSH in MSEs. At the very least, therefore, this means finding appropriate methods of qualitative inquiry that will probe these experiences sufficiently to better understand the effects of the ‘structures of vulnerability’ in which older research has found them to be embedded. Such approaches are not without challenges in relation to both the accessibility of subjects and the depth of the qualitative analysis that is required to make a significant contribution to knowledge. MSEs are notoriously difficult to study — even where the focus is on their owners and managers. It is likely to be considerably more challenging to extend research coverage to include workers and to provide a meaningful understanding of their experience and its determinants in

MSEs. Nevertheless, ways need to be found to do so and, in the present review, there are several examples of studies in wider sociological and labour relations literature that provide some useful indications of how this might be achieved.

Whatever approach is adopted towards the methods of new research, it needs to be acknowledged that 'going upstream' implies understanding the effects of business, economic and regulatory contexts in which OSH is situated in small and micro firms. This needs to be achieved not only in relation to owner-managers' perspectives on how these contexts serve to limit the time and resources they have available to devote to ensuring effective arrangements, but also in relation to the perspectives of the workers themselves as well as from those of other influential players in the wider regulatory, business and economic contexts in which MSEs are situated. In Chapter 5, we reviewed socio-legal and regulatory research and academic writing that addressed the challenges of OSH in MSEs directly, as well as that which addressed other, often much wider, elements of current governance and regulation, but which was nevertheless relevant to achieving a better understanding of the challenges for improving arrangements for OSH in MSEs. As with workers' experiences, we found much within this body of knowledge that is useful for improving the understanding of the contexts and environments in which arrangements for OSH in MSEs are made, and much that is disturbing in the analysis of the direction of current political thinking concerning these matters (see, in particular, Almond, 2015). However, at the same time, we have found little in the way of direct study of these matters in relation to their measured effects on OSH in MSEs. In particular, there is little robust evaluation of the effectiveness of new regulatory strategies that are aimed at so called 'hard-to-reach' micro and small firms. We have argued that there are consequences for OSH in MSEs that arise from the combination of economic dependency, dictated by the business position in which they are frequently situated. A now substantial body of research indicates that this has profound effects in determining the nature of OSH outcomes within wider contexts of regulation and governance. There is a growing body of literature exploring these effects on the conditions under which work takes place and their implications for its governance and regulation — although much of this literature does not address MSEs directly. For example, studies concerning the effectiveness of strategies of new governance on intervention in supply-chain relationships rarely focus on MSEs. Nor do many of these studies evaluate the implications of supporting workers and their employers in improving OSH arrangements and outcomes in MSEs, while at the same time balancing these approaches with policy requirements concerning the regulation of risk and the question of 'regulatory burdens' on small and micro firms. Thus, while there is substantial relevant theoretical discussion in the literature, there is little empirical evidence. But, as we have argued in previous chapters, these matters of context and environment ultimately determine the effectiveness of interventions aimed at improving arrangements for OSH and outcomes in MSEs and it is therefore imperative that empirical evidence is gathered from appropriate sources and subjected to robust analysis in order to give continuing theoretical discussion some substance — and help policy decisions to be taken in the light of such analysis. However, as with learning more of workers' experiences, and 'going upstream' to get a better understanding of what determines arrangements and outcomes in MSEs, the implications for research design and choice of research methods to address these issues are substantial and will require careful consideration in future empirical study.

#### **7.2.4 Evaluating intervention**

In Chapter 6, we presented an evaluation of recent research concerning the effectiveness of interventions. Here again we found significant gaps in the knowledge requiring further research. Our efforts to evaluate existing research using an approach framed by realist evaluation — in which we asked what works, for whom and in which contexts — left many questions, and especially those concerning context, unanswered. For example, we found very little in the way of robust understanding of the relationship between intervention, effectiveness, transferability and the wider regulatory and economic contexts governing these matters. We also found that the full process (from design to intervention to evaluation) was seldom covered in existing studies. These findings resonate with those that emerged in previous chapters and are outlined above. In short, they point to the need for future research that moves beyond the largely descriptive narratives of programmes, strategies and interventions that our review has found to be prevalent in recent accounts towards providing more

appropriate and robust *evaluation of their uptake and effects*, while at the same time taking account of both the heterogeneity of MSEs and the challenges of multi-disciplinarity in research on OSH in them. This we think will aid a more complete and improved understanding of the conditions under which strategies to address support and intervention may be most effective. In addition to being systematic, we think it is useful to continue to inform this research with arguments and techniques derived from *realist evaluation*, which allows a fuller exploration of the outcomes and what influences them, as well as the contexts in which they occur, and enables analysis of how prevention strategies are adapted to the conditions and prerequisites of different target groups (such as in different sectors for example) and of the ways in which they and the resources they use for influencing improvement in health and safety in small and micro firms are deployed. Our present review identifies gaps in the knowledge in all these areas and it is to these gaps that we think the attentions of future research need to be directed.

We also noted that intervention research focused mostly on arrangements to address conventional risks associated with chemical, physical or biological exposures. There were few, if any, studies that examined interventions aimed at supporting the prevention or control of psychosocial risks in MSEs. Given the growth in the prevalence of these risks, it would seem that further research on interventions in these areas may also be warranted. In particular, there is a need to further explore the possible relationships between job quality, working conditions and psychosocial risks that are suggested in high-level aggregated quantitative data with more in-depth qualitative studies of 'lived in' experiences within small and micro enterprises, and to determine if there is a role for intervention to improve outcomes in relation to the mental and emotional health of workers in these situations.

Finally, as previously noted, our review points to conclusions that emphasise the importance of the character of the national contexts in which MSEs are situated in shaping arrangements and outcomes in OSH. This applies equally to the effects and effectiveness of intervention. It is clear that these arrangements for OSH in micro and small firms and the interventions to improve them do not exist in a vacuum but are one element of the wider national 'health and safety system' in which they are situated in every country. We think that the approach we have adopted to clustering countries in the analysis presented in this review is a useful model for further and more detailed comparative analysis of national contexts. We therefore recommend that further research in this respect adopts a similar approach to the selection of Member States for more detailed study, and that this study includes the analysis of the role of national contexts in determining both the nature of arrangements for OSH in MSEs and the analysis of the effectiveness of interventions made to improve them.

### 7.3 A summary and a way forward

This report represents a stand-alone critical review of current knowledge on OSH and the approaches to improve it in MSEs in the EU. It also represents the point of departure for more detailed analysis to be undertaken in subsequent parts of the overall project of which it is part.

The report demonstrates that concerns for OSH arrangements and outcomes in relation to MSEs are well founded. A constellation of observations, when taken together, point towards the conclusion that, for workers in a substantial proportion of these firms, the risk of serious injuries (and fatalities) is significantly greater than for those in employment in larger firms, and the risk of other forms of harm probably follows the same pattern. The primary reason for this is the economic position and business strategies assumed for the survival of these firms by their owner-managers, which help ensure a multifaceted absence of resources — including not only economic resources but also those embracing knowledge, skills and recourse to protection for workers. Such resources are necessary to undertake adequate arrangements to manage the risks to which workers in these firms may, therefore, in their absence be disproportionately exposed and vulnerable. There is also some evidence that because current regulatory approaches towards OSH arrangements are largely based on the experience in larger enterprises, they may not themselves be the most appropriate or effective means of achieving improvements in MSEs. While these findings are ubiquitous for all EU Member States, there is further evidence to suggest there are also some national influences on the extent to which they are experienced. There is a clear need to better understand the bundles of organisational practices in specific economic environments which, for convenience in this report, we have collectively labelled 'low



road strategies', which are found in a large proportion of MSEs and which the research literature indicates may explain the routes to higher risks for workers in these enterprises.

Strategies aimed at addressing these challenges are found in the health and safety systems of most Member States of the EU. They include a large range of initiatives. However, evaluation of the effectiveness of such strategies has produced mixed and incomplete outcomes. This review of published research suggests that, while there are some reliable findings concerning 'what works', they are narrowly defined and generally only valid in relation to interventions *within a limited range of MSEs*. There is far less known about the contextual determinants of their effectiveness. Therefore, knowledge concerning the sustainability or transfer of interventions that could lead to improved OSH in MSEs remains quite limited, as does analysis of the role of supports and constraints in the wider social, economic and regulatory environments in which they are situated. The review also shows that a large part of published work on interventions is descriptive rather than adequately analytical, which further limits its usefulness. In addition, it has argued that most research on OSH in MSEs is focused on the situation of their owners and managers and only briefly considers the experience of workers in these firms and what determines this experience. Nor does it pay sufficient attention to the regulatory or economic contexts in which it takes place, the influence of these contexts or the influences of structural and organisational changes in the economy which have contributed to both the prominence of MSEs and the problems of OSH with which they are beset.

We have argued in the present review that all these matters will require further attention in future empirical studies. The present project has two work packages, both devoted to undertaking such further research. The findings of this review confirm that the aims and methodologies of these work packages are broadly in line with what is required of further research. However, the review identifies or reconfirms several further points of emphasis for future work:

- There is a need to improve the quality of empirical study with more analytical and theoretically informed research.
- Better quality data concerning outcomes (including psychosocial effects) should be sought and, where possible, analysed with techniques enabling enterprise size effects to be distinguished from other effects. Greater attention should also be given to means of achieving more reliable comparative analyses.
- A better understanding is required of the bundles of organisational practices in specific economic environments that characterise the 'low road strategies' adopted by a substantial proportion of MSEs and their association with higher risks for workers' health and safety.
- More balanced attention should be given to workers and owner-managers in the establishments studied and the economic, business and regulatory environments in which they are situated and which determine the nature of arrangements made for OSH and their outcomes in MSEs. This of course is far from straightforward, and the challenge of the fundamentally different ways in which workers may view OSH from their employers will need to be confronted. There is a need to better understand the many forces that shape these perspectives — notably the fact that businesses are 'private' undertakings and workers have only some 'rights' within these private establishments in capitalist modes of economic activity. At the same time, it is also necessary to avoid simply making worker–owner-manager relations into a polarised duality. The social location of supervisors, for example, in small workplaces is complex and their role in OSH is not well understood at least in part because of this structural ambiguity.
- There is a particular need to further research the role and influence of regulation and regulatory inspection, as well as other means of influencing OSH arrangements in MSEs in the context of the structural and organisational features of the economies in which they are embedded. The precise nature of these influences should be explored further with both qualitative and quantitative studies that seek to 'go upstream' in understanding the situated experience of OSH in MSEs.
- Opportunities to explore differences in the national determinants of OSH practice and outcomes should be explored with comparative studies of selected EU Member States that are representative of different national contexts.

- Heterogeneity should be borne in mind when analysing all these experiences, both within MSEs and in the environments in which they are situated.
- Similar theoretically informed analysis of contextual factors should be explored further in the evaluation of the extent, role and effectiveness of interventions to improve this experience in MSEs. The construction of 'intervention' should be carefully defined and its usefulness evaluated not only in terms of narrowly focused efforts to change behaviours in carefully controlled scenarios, but also in terms of sector, national and European strategies and resources directed at improving OSH arrangements and their outcomes in MSEs. Again, comparative study of the influence of national contexts should be explored.
- The above elements, when taken together, indicate a strong case for more theoretically informed comparative analysis in which the determinants of health and safety arrangements in MSEs are understood in relation to the wider policy contexts in which economic and regulatory approaches influence the experience of work for the millions of workers in the EU who are employed in MSEs.

Keeping these points of emphasis in mind, we reiterate that the empirical research programmes outlined in work packages 2 and 3 provide a useful framework for future study. If account is taken of the findings of the present review in the detailed design of the empirical research planned to fulfil their aims, these work packages should lead to new empirical studies providing useful analysis and addressing some of the limitations this review has identified in previous research. Thus, they will be able to make a contribution to an improved understanding of OSH in MSEs, which will be helpful in informing future policy development.



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