

The joint analysis of the European survey of enterprises (ESENER-2) and labor force survey (LFS)

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Abstract

Introduction

Currently, many large European databases, such as the LFS, with valuable data are available. In order to obtain a comprehensive picture of the state of occupational safety and health (OSH) in Europe it can be valuable to combine information from different sources, for example from employees and enterprises. The present study aims to evaluate to what extent combining data of the ESENER-2 (i.e. enterprises) and the LFS 2013 ad hoc module (i.e. employees) on reported work-related health risks, can produce meaningful information. The analysis of data from these two different data sources pose two main problems: (1) the different levels of observation: companies and employees. (2) the employees are not sampled from the companies represented in the enterprise survey. Whether combining these data is feasible was studied by evaluating the association between reported occupational risks by employees with risk management in enterprises for general OSH, musculoskeletal disorders (MSD) and mental health (MH). These associations were hypothesized to be positive and moderated by drivers of risk management.

Methods

Both datasets contained three common background variables: country, sector, and enterprise size. We used the variance of the variables in the datasets, between the categories of these three background variables to combine the datasets. The variances were obtained by performing a multilevel analysis with the background variables as hierarchical levels in the data. For these levels the random variance was extracted and this resulted in a dataset which contained the variables with the variances between countries, a dataset with the variances between sectors within countries, and a dataset with the variances between differently sized companies within sectors within countries. In these datasets we evaluated the associations between variances in reported risks and risk management. Additionally, the impact of drivers of successful risk management was investigated. Drivers of successful risk management were: management commitment, formal and informal employee involvement, and legal obligations.

Results

The results showed that for the association between reported risks and OSH management the variance between companies of different sizes within sectors within countries showed the highest correlation ($r=0.25$). For the association between MSD risks and MSD risk management, the variances between sectors within countries showed the highest correlation ($r = 0.43$). The variances between differently sized companies within sectors within countries showed the highest correlation for MH risks with MH risk management ($r = 0.38$).

Informal employee involvement decreased the association between OSH risks and OSH risk management for differently sized companies. However, formal employee representation positively affected the association between reported OSH risk and OSH risk management variance between sectors. Formal employee representation increased the association between MSD risks and MSD risk

management variance between sectors. Also, management commitment positively influenced the association between MSD risks and MSD risk management variance between different sized companies. Informal employee involvement in OSH and MH decreased the association between MH risks and MH risk management between different sizes companies. However, all drivers positively affected the association between MH risks and MH risk management variance between sectors.

Discussion

Generally the associations between risks and risk management were positive, which confirms the expectations. However, associations are not very large. Combining the datasets on the common background variables enables the analyses of data reported by employees jointly with the data from enterprises, even when they are not samples from the same companies. However, the conclusions can only be formulated at the level of the background variables. We can analyze the variance between companies and employees of different sectors within countries, but not on the levels of employees in Europe in general.

Accordingly, additionally we can conclude that in sectors where more risks are reported, also more risk management takes place and this association increases when there is formal employee representation. For the categories of company size, where the reported general OSH and MH risks are high, there is more OSH and MH risk management, however this association decreases when there is informal employee involvement.

Overall, this method can be used to jointly analyze other databases, where the data sources are different. However, the results should be interpreted with care.