

FROM OBSERVATION TO EVIDENCE: HOW OSH BAROMETER DATA HELPS WORKPLACE ACTORS REBALANCE PREVENTION

Case overview

Maria: seeing balance through data

This case study follows the fictional person Maria, who represents a regional occupational-safety delegate for a construction workers' union in northern Portugal. Its purpose is to illustrate how a workplace representative can use the European Agency for Safety and Health at Work (EU-OSHA) OSH Barometer (<https://visualisation.osha.europa.eu/osh-barometer/>) to interpret national safety trends and convert them into actionable insights. The case study is based on real data provided by a wide range of official and validated data sources, however it remains illustrative.

Maria is a regional occupational-safety delegate for a construction workers' union in northern Portugal, who notices a pattern she has also heard about from colleagues across several districts: after years of steady improvement, accident rates no longer seem to be declining. Earlier that morning, a worker on a school construction site injured his hand when a scaffolding plank slipped – a minor incident, but enough to reinforce Maria's sense that progress has become fragile.

Her experience with the OSH Barometer in this case study demonstrates how a non-expert stakeholder can apply harmonised European data to diagnose problems, communicate evidence, and contribute to prevention strategies and other relevant initiatives. The case adopts a bottom-up perspective: Maria starts from the daily realities on construction sites and builds towards developing a system-level understanding. By linking her observations to official European datasets, she identifies a possible structural imbalance between demands and pressures, such as physical strain, time pressure and subcontracting practices, and protection measures, such as training, inspection capacity and social dialogue.

Through the EU-OSHA OSH Barometer, Maria learns to navigate across modules – from accident statistics and data on working conditions, to prevention measures and enforcement indicators. Each dataset adds another layer to her analysis, helping her demonstrate that the apparent 'safety plateau' is not a local anomaly but part of a broader European trend in which preventive capacity seems not to be expanding at the same pace as demands in the workplace. The case shows how the OSH Barometer functions not only as a statistical portal but as a practical tool to support decision-making: it enables stakeholders to compare, contextualise and ultimately to take action to renew progress in occupational safety and health (OSH). The following sections trace Maria's journey from initial concern to data-driven collaboration, illustrating how transparent information and a shared factual basis can strengthen social dialogue and support continuous improvement in prevention efforts across Europe.

Maria's concern

At a new school construction site near Porto, Maria, a regional occupational-safety delegate for a construction workers' union, notices a pattern she has also heard about from neighbouring districts. After more than a decade of steady improvement, the number of workplace accidents no longer seems to be declining. Some years show progress, others a rebound. Colleagues mention several recent incidents – including a minor hand injury that morning – reinforcing her impression that advances in accident prevention have become fragile.

For most of her 10-year career, Maria has represented around 20,000 workers employed mainly in small and medium-sized construction firms across northern Portugal. She coordinates site visits, contributes to bipartite safety committees and provides feedback to the national tripartite OSH council. Accident prevention is a core item on every agenda: for years, steadily declining numbers symbolised

successful collaboration between trade unions, employers and the national authorities (labour inspectorate). Recently, however, that success story seems to have reached its limits. Campaigns on harness-use and risk assessment and awareness continue, yet site conditions appear unchanged.

Driving back to her office, Maria reflects on this contradiction. Union members report long hours, intense physical strain and overlapping subcontracting chains – persistent pressures that shape everyday work. At the same time, prevention budgets can be tight and inspectorate capacity seems to remain limited, restricting the protection and support available at workplace level. She wonders whether the gains of the previous decade may have exhausted the most accessible improvements and whether deeper structural change is now required.

At her desk, she reviews national statistics, sectoral bulletins and social security registers. Each dataset covers a different timeframe and definition – some report lost-time injuries, others total notifications – making it difficult to form a coherent picture. Without consistent evidence, it will be hard to persuade decision-makers that the slowdown is real. In her notebook she writes a phrase she remembers from an early training course:

‘When pressure keeps rising and protection does not, people get hurt.’

The sentence captures what she sees every day: workloads rising while preventive support seems to fail to expand at the same rate. Her mentor once summarised the principle even more simply: safe work is balanced work. Maria suspects that this balance between the demands placed on workers and the resources provided to protect them has weakened. To confirm this, she needs data that are recent, comparable across countries and credible to the actors engaged in social dialogue.

Making sense of the OSH Barometer – seeing work in balance

While reviewing national registers and sectoral bulletins, she recalls the OSH Barometer as a single access point where accident statistics, exposure indicators, prevention measures and system-level capacities can be explored together. Before collecting any figures, Maria familiarises herself with the OSH Barometer, a visual information system developed by EU-OSHA and supported by the European Commission. It brings together harmonised data from European countries, including how the countries manage occupational safety and health.¹

To help interpret the relationships across modules, Maria draws on the Job Demands-Resources (JD-R) framework, a widely used way of thinking about balance at work.

For a detailed explanation of the Job Demands-Resources (JD-R) Model and its relevance to occupational safety and health, see the ‘Deep-dive Box: The Job Demands-Resources (JD-R) Model’ below.

In this approach, job demands are aspects of work that require sustained effort or cause strain – such as workload, time pressure or physical hazards – while job resources are the resources or supports that help workers cope with such issues and perform effectively, such as training, supervision, autonomy and social support. The theory says that when demands rise faster than resources, fatigue and accident risk increase; whereas when resources keep pace with demands, motivation, safety and well-being improve.

Maria uses this idea not as a theory lesson but as a mental map for reading the OSH Barometer’s indicators. She groups the data she plans to explore into three analytical levels:

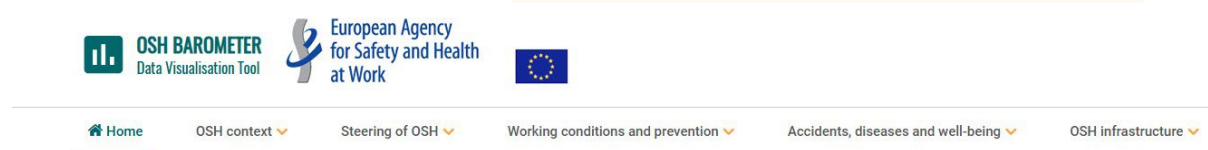
¹ For a detailed overview of the OSH Barometer’s structure, data sources and modules, see Appendix 1. As this is a case study, the narrative illustrates a plausible sequence of steps that a workplace representative might follow; some simplifying assumptions are made for clarity, but the underlying functions and datasets accurately reflect the provisions of the OSH Barometer.

Level	Examples of demands	Examples of resources
Job	Long hours, repetitive work, physical strain	Social support, ergonomic equipment
Company	Production pressure, short-term contracts	Prevention systems, training, supervision
National system	Economic pace, sectoral growth	Inspections, regulation, social dialogue

Looking at the OSH Barometer's main menu (Figure 1), Maria notices that its structure mirrors this same logic of balance:

- **Working conditions and prevention** → job- and company-level demands and resources
- **Accidents, diseases and well-being** → outcomes of that balance
- **OSH infrastructure** → system-level supports such as inspection, regulation and dialogue

Figure 1: Top-level structure of the EU-OSHA OSH Barometer



The three main sections correspond to different levels of the OSH system and together illustrate how the OSH Barometer visualises the relationship between demands and resources. Rather than attributing risks to individual behaviour, this perspective highlights system capacity – revealing how prevention measures, organisational support and governance evolve in response to new pressures.

Maria concludes that her next task is to use the OSH Barometer to view these dimensions side by side and assess whether rising demands and only slowly expanding resources can explain the fragile progress she has observed.

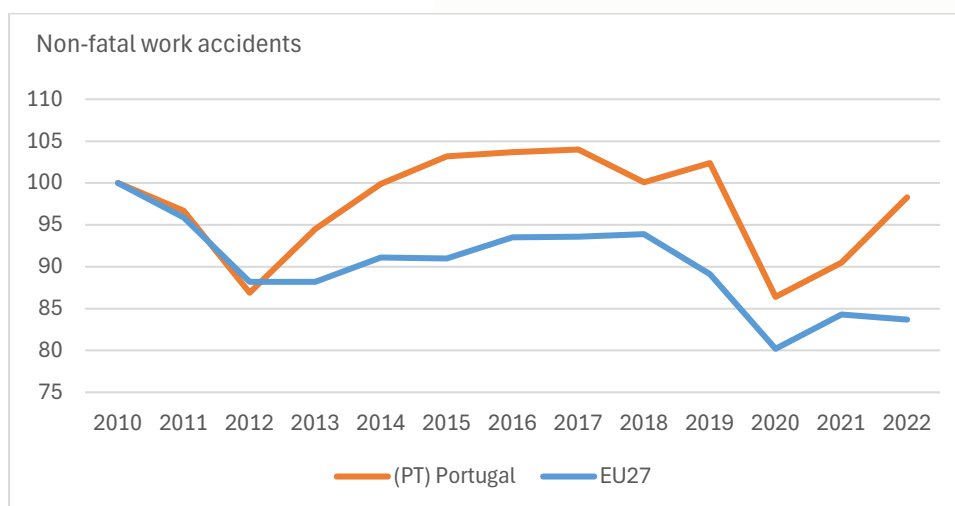
Finding a tool to understand what is happening

The next morning, Maria returns to EU-OSHA's OSH Barometer, ready to explore it in depth. She opens **Accidents, diseases and well-being** → **Work accidents** and sees for Portugal the trend for non-fatal work accidents she suspects confirmed: a sharp fall from 2010 to 2012, a gradual rise up to 2016, a plateau through 2019, a COVID-19 dip in 2020 and a rebound afterwards. Although the overall level of work accidents is lower than a decade earlier, the long-term improvement has become fragile.

The EU-27 average, displayed automatically beside Portugal, shows a clear long-term decline in non-fatal work accidents, with short-term fluctuations. Portugal, however, diverges from this broader trend: after an initial decrease, its index rises again, forming a plateau and even showing a partial reversal of progress after 2012. Maria recalls that part of the early decline between 2010 and 2012 can be attributed to reduced activity during the economic crisis – a pattern also reflected in national sources accessible through the OSH Barometer's methodological links. Yet the subsequent rise and persistence at a higher level of non-fatal work accidents indicate that the underlying risks did not diminish when economic activity recovered.

Taken together, the data suggest that non-fatal accident rates in the EU tend to fluctuate with economic cycles, especially when prevention efforts fail to expand in line with levels of work intensity. For Maria, the 'safety plateau' observed in Portugal is a warning sign: progress becomes fragile when the demands on workers increase but the resources for prevention and protection at job, company and national levels lag behind the pace of this growth (Figure 2).

Figure 2: Non-fatal work accidents, Portugal (orange) and EU-27 average (blue), index 2010 = 100, 2010-2022



Source: EU-OSHA OSH Barometer – Eurostat ESAW.

Hovering over the line reveals indexed values with 2010 set to 100, showing how incidence rates changed relative to that baseline. A note below the chart explains that the data come from Eurostat's European Statistics on Accidents at Work (ESAW), where non-fatal accidents are expressed as incidence-rate indices to ensure comparability across Member States. Between 2010 and 2022, the EU-27 index fell from 100 to around 80, while Portugal's index ended at a slightly higher level, illustrating a long-term decline punctuated by short-term reversals.

To explore possible causes, Maria turns to the menu linking to **Prevention in companies, Working conditions** and **Enforcement Capacity**. The OSH Barometer's structure allows her to move from outcomes (accident trends) to potential drivers of demands or resources (training coverage, exposure levels, inspection density). The arrangement here mirrors the broader balance she is examining – pressures (demands) on one side, protections (resources) on the other. Curious about methodological robustness of the data, she opens the **Detailed information** and the **Methodology** presented below the graph. A concise note confirms that:

- Accident data are collected under ESAW (Eurostat) from government sources.
- Working-conditions and prevention indicators come from EU-OSHA's European Survey of Enterprises on New and Emerging Risks (ESENER), completed by the person responsible for OSH in each company.
- The OSH Pulse Flash Eurobarometer is a worker survey which reflects the worker's perspective, focusing on mental and physical stressors and the preventive measures implemented in workplaces.
- Additional working-conditions indicators come from Eurofound's European Working Conditions Survey (EWCS), which also surveys workers directly.
- Enforcement statistics are based on administrative data reported by national authorities to the Senior Labour Inspectors Committee (SLIC).

Together, these sources capture complementary perspectives – from employers, workers and public authorities – allowing the OSH Barometer to integrate information from multiple levels of the European OSH system. This triangulation enhances the reliability of cross-country comparisons and supports a balanced understanding of both preventive capacity and exposure.

The harmonisation of definitions across Member States reassures Maria that the comparisons are valid. She bookmarks the page and writes in her notebook:

*'The OSH Barometer shows both sides of the balance – demands and resources.
Use it to locate where protection no longer matches pressure.'*

Maria realises that the OSH Barometer platform offers more than numbers: it provides a shared factual basis for dialogue between unions, employers and authorities. For years, each group relied on separate reports; now they can refer to the same European evidence. What began as a local observation is becoming a structured investigation anchored in verified data.

Before closing her browser, Maria notes the sections she will explore next:

- **Work accidents** (to confirm the trend),
- **Working conditions** → **Physical risk** (to assess exposure),
- **Prevention in companies** → **Training on OSH** (to consider resources),
- **OSH infrastructure** → **Enforcement capacity**

Together, these modules will help her map how the balance between demands (pressure) and resources (protection) has evolved over time across job, company and national levels.

Tracing the problem in the data

Maria studies the accident curves more closely. What at first looked like a plateau now reveals a worrying reversal: after early gains in terms of non-fatal accident reduction between 2010 and 2012, Portugal's accident rate climbed again, surpassing its baseline by 2016 and remaining high until the pandemic temporarily reduced exposure. Within two years, however, accidents had rebounded to almost pre-COVID levels – well above the 2010 benchmark.

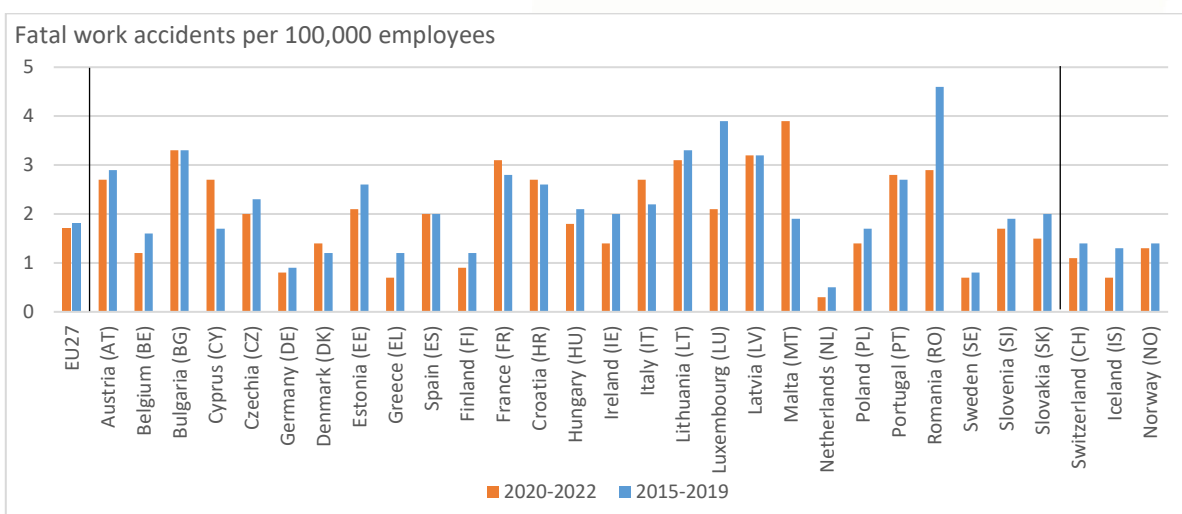
The EU-27 average shows a less acute pattern: a gradual decline, a brief plateau, a pandemic-related dip and only a partial rebound that remained below 2010 levels. Based on her experience and expertise, Maria starts to believe that the different changes in accident rates through time, could be interpreted according to Figure 3. To that end, Portugal's faster and fuller return to pre-pandemic accident rates therefore signals not stability but regression.

Figure 3. Changes in accident rates and reasoning

Period	Change in accident rate	Interpretation
2010-2012	Steep fall	Economic contraction and early prevention gains
2012-2016	Rapid rise (Portugal > EU-27)	Re-expansion of activity; risks re-emerge
2016-2019	Persistently high	Prevention effort no longer advancing
2020	Sharp drop	COVID-19 restrictions reduce exposure hours
2021-2022	Steep rebound	Underlying hazards unchanged; progress reversed

To check whether this pattern also affects the most serious incidents, Maria opens the **Fatal work accidents** tab. Showing fatal accident rates per 100,000 employees, the OSH Barometer displays two periods – 2015-2019 and 2020-2022 – rather than a continuous series. Portugal's rate has risen slightly, whereas the EU-27 average reveals a modest fall. This contrast suggests that fatal accidents in Portugal have not followed the broader European improvement trend. The absence of progress, even for the most severe cases, reinforces Maria's concern that prevention systems in the country have lost momentum (see Figure 4).

Figure 4. Fatal work accidents per 100,000 employees, 2015–2019 and 2020–2022. Portugal's fatal accident rate increased slightly, while the EU-27 average declined



The comparison shows that, unlike the European trend of gradual improvement, Portugal's rate worsened – confirming that the slowdown observed for non-fatal cases extends to the most severe incidents.

Source: EU-OSHA OSH Barometer – Eurostat ESAW data, 2023.

'Accident rates fluctuate with economic cycles when prevention stops expanding', Maria writes. 'Safety progress has become fragile rather than linear.'

Because ESAW compiles data from labour-inspection and social security registers under a harmonised Eurostat methodology, they provide a common ground for comparison at EU level. This reliability is crucial for social dialogue discussions, where national figures are often contested. For Maria, the pattern that emerges strengthens the argument that sustainable safety depends on maintaining balance: when job-level pressures keep rising and preventive resources stagnate, accident rates rebound.

Maria's next step is to test whether these rising accident rates correspond with persistent or growing exposures to risk, and with any weaknesses in preventive mechanisms. The **Working conditions**, **Prevention in companies** and **OSH infrastructure** modules represent exactly those dimensions – the job, the company and the national system – and can be examined in turn using the same OSH Barometer interface shown earlier in Figure 1.

Company-level resources

Maria next examines how prevention systems have evolved within companies. In the **Prevention in companies** module of the OSH Barometer, she opens the indicator '*Risk assessment – regular performance*'. Two datasets appear – **ESENER 2014** and **ESENER 2019** – showing the percentage of establishments that routinely carry out workplace risk assessments.

At first glance, coverage in Portugal seems stable: between 2014 and 2019 there was little change in the share of companies conducting regular assessments. The same pattern appears in the EU-27 average, with most countries showing only small increases. The data also suggest that since 2014 progress in implementing formal prevention measures has slowed and largely stabilised.

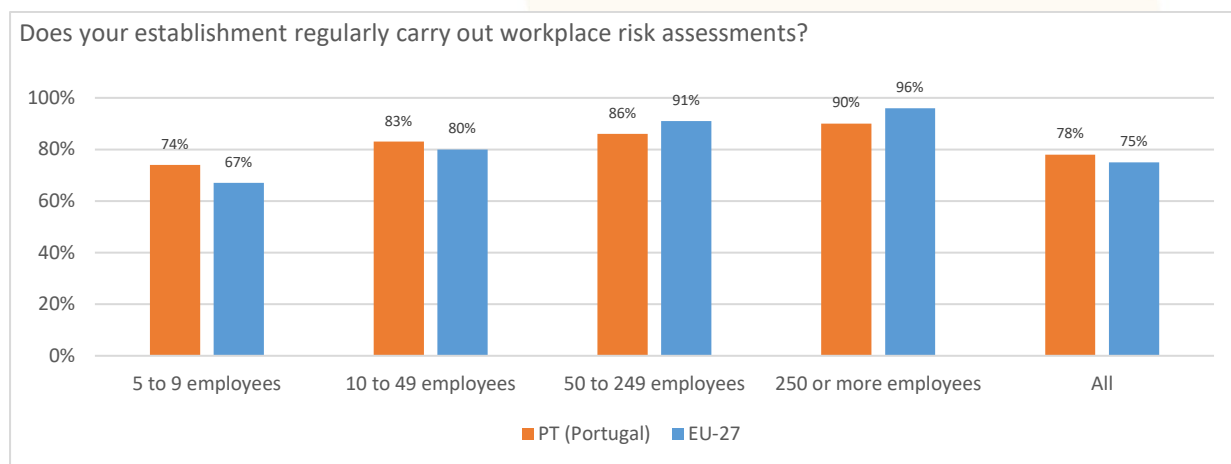
The latest **2024 wave of ESENER** shows a gradual continuation of earlier progress. Overall, **84 %** of Portuguese establishments and **76 %** across the EU-27 reported performing regular workplace risk assessments. Coverage increases strongly with company size – from **83 %** among micro-enterprises (5-9 employees) to **98 %** among large firms (250+ employees) – and varies by sector, reaching **90 %** in construction and related activities but only **68 %** in public administration. These figures point to slow but steady improvement, indicating that prevention systems are still expanding, albeit unevenly. The overall trend is one of consolidation at a high level rather than full stagnation.

When Maria looks more closely at the breakdowns by company size and sector, a clearer pattern emerges. Large firms report comprehensive prevention systems, while small businesses and micro-enterprises often lack regular assessments. In construction – the sector she visits most frequently – coverage especially for small companies remains below the national average. This uneven progress explains why site conditions often appear unchanged: preventive capacity in terms of risks assessments could seem to have reached its limits in smaller companies, where resources and expertise could be scarce or awareness low.

*‘The system is stable but uneven’, Maria notes.
‘Prevention has become concentrated in the best-resourced firms.’*

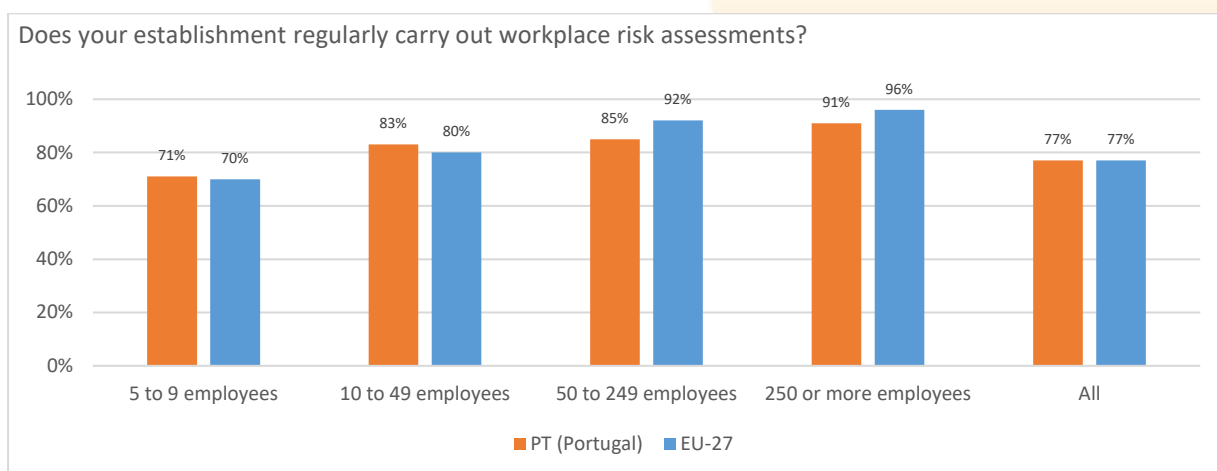
These observations are reflected in the ESENER charts below (figures 5 and 6), which Maria downloads directly from the OSH Barometer.

Figure 5a. Establishments performing regular workplace risk assessments, by company size, Portugal and EU-27 (ESENER 2014)



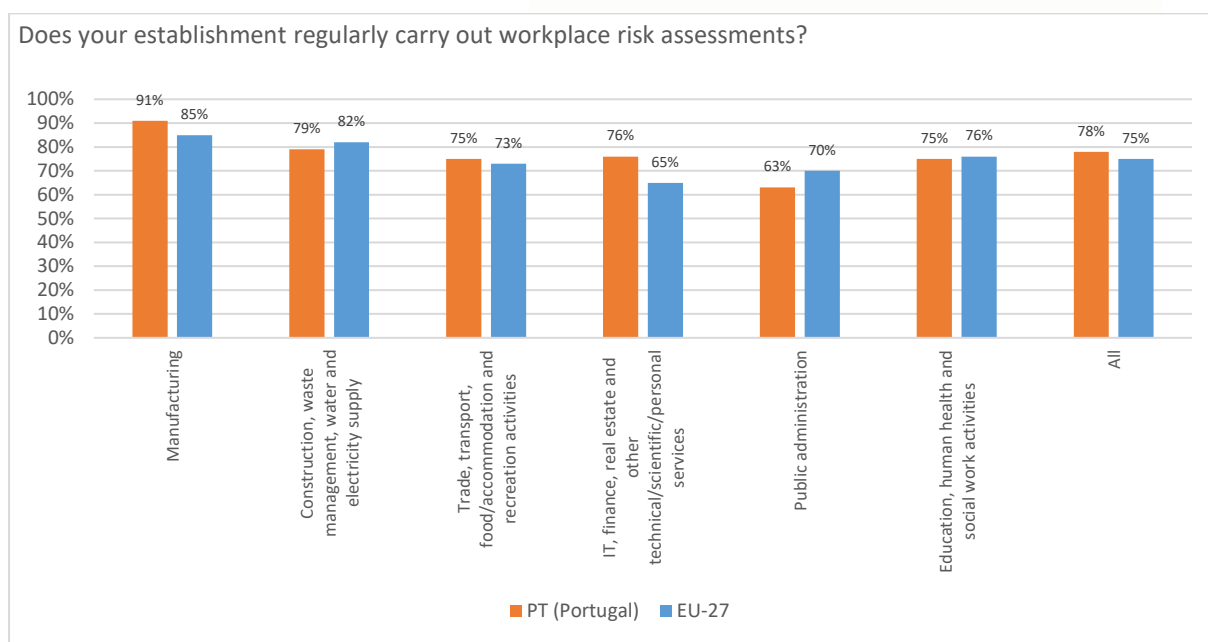
Coverage increases strongly with establishment size: large firms report much higher implementation than small businesses or micro-enterprises.

Figure 5b. Establishments performing regular workplace risk assessments, by company size, Portugal and EU-27 (ESENER 2019)

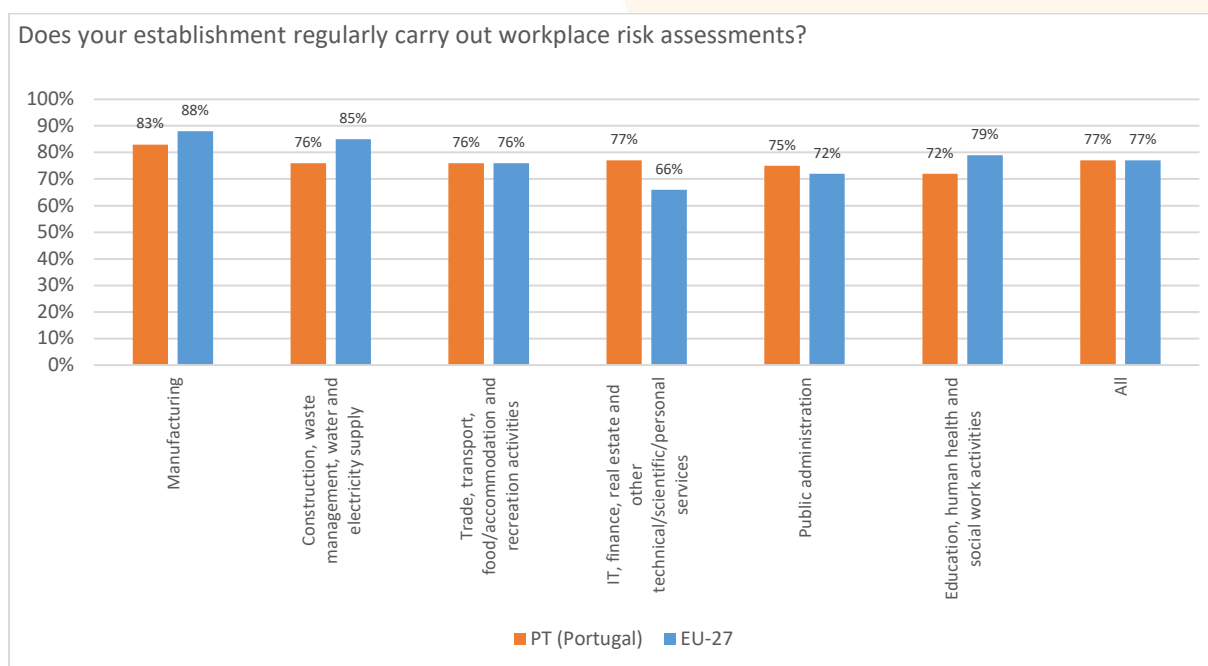


Between 2014 and 2019, overall coverage changed little. The gap between large and small firms remains wide, indicating that preventive practices have stabilised among well-resourced companies but still lag behind in smaller workplaces.

Source for both: EU-OSHA OSH Barometer – ESENER 2014 and 2019.

Figure 6a. Establishments performing regular workplace risk assessments, by sector, Portugal and EU-27 (ESENER 2014)

High-risk sectors such as construction and transport report lower coverage than the national average, showing uneven prevention capacity.

Figure 6b. Establishments performing regular workplace risk assessments, by sector, Portugal and EU-27 (ESENER 2019)

Five years later, sectoral differences persist with little overall change. Construction and transport continue to lag behind, confirming that progress has plateaued. Source for both: EU-OSHA OSH Barometer – ESENER 2014 and 2019.

For Maria, this confirms that the challenge is not the absence of regulation but could be the limited diffusion of preventive practice. Where organisational resources – training, supervision, technical expertise – do not expand, accident risks persist despite formal compliance frameworks.

To better understand these limits, Maria also consults the EU-OSHA report **‘Portugal’s approach to OSH compliance’** (EU-OSHA, 2025). The report shows that national enforcement relies mainly on the provision of advice and awareness-raising rather than strict enforcement and sanctions, reflecting on one hand a preventive model that attempts to promote safety culture and on the other, a capacity-limited model also relying on external prevention services. Portugal has roughly **250 labour inspectors nationwide**, which – relative to the size of the workforce – aligns with the OSH Barometer indicator showing around **10 inspectors per 100,000 workers**. Inspection coverage therefore remains comparatively low, particularly among micro-enterprises, and the authorities prioritise high-risk sectors, such as construction and agriculture. While cooperation between the labour inspectorate (ACT) and social partners is strong, data-sharing among public authorities remains fragmented.

This context helps Maria interpret the OSH Barometer data: Portugal’s OSH system has strengthened its guidance role but is working to scale up its enforcement capacity. The possible imbalance between growing reported organisational and psychosocial demands and limited institutional resources thus extends from individual companies to the national level. The next step, Maria decides, is to verify whether workers’ exposure to physical strain has decreased at all, using the **Working conditions → Physical risk indicators**.

Job-level demands

Maria now turns to the **Working conditions** module to see whether exposure to physical strain has decreased over time. In the *Physical Risk → Ergonomic risks* section of the OSH Barometer, she selects Portugal and compares 2010 and 2015 data from the EWCS. The results are sobering. Roughly two-thirds of Portuguese workers report performing repetitive movements, and about half experience tiring or painful positions. These levels are virtually identical to those recorded five years earlier and remain among the highest in Europe. Although tools and technologies have advanced, the everyday physical demands of work seems to have changed little.

A similar picture appears for environmental exposures such as vibrations, loud noise and temperature extremes: Portugal’s figures for 2010 and 2015 are almost unchanged, and remain above the EU-27 average. Maria interprets this as a clear sign that prevention efforts have not substantially reduced basic physical stressors. (See Figures 7 and 8.)

‘If exposures stay high while accident numbers fluctuate, then the balance point is fragile’, Maria writes. ‘We are holding steady only because luck and effort offset missing protection.’

Figure 7a. Workers reporting exposure to vibrations, loud noise and temperature extremes, Portugal and EU-27 (EWCS 2010)

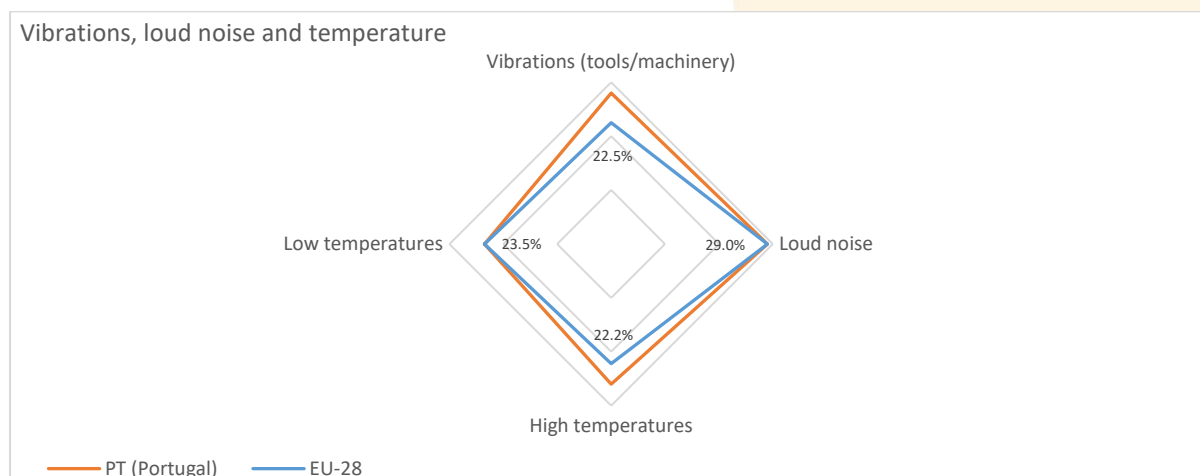
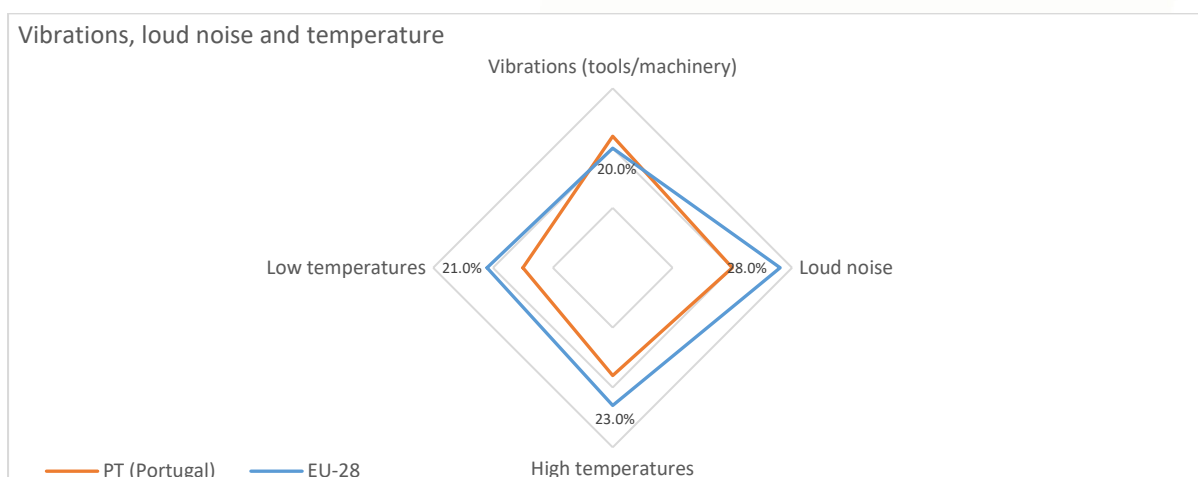
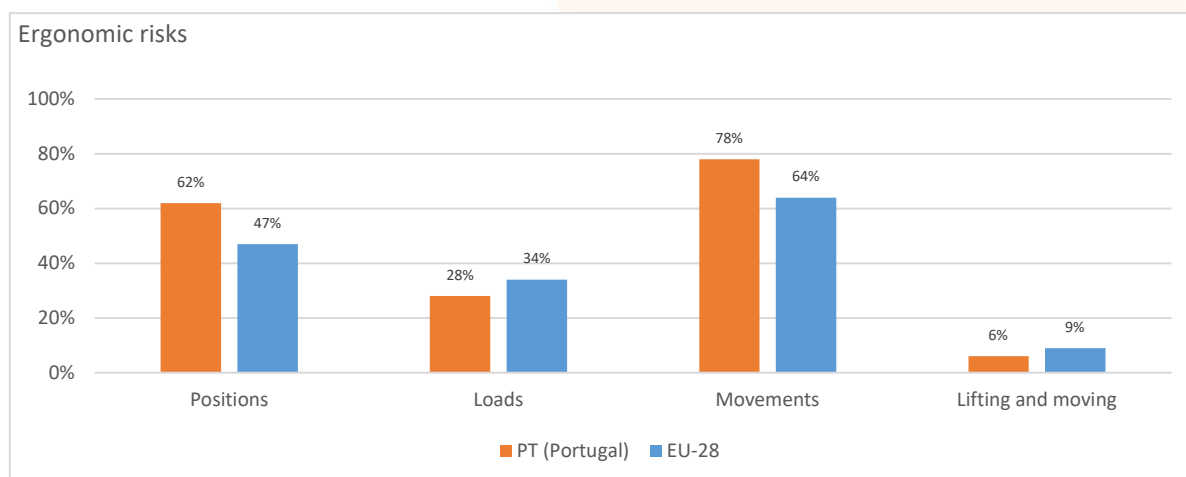
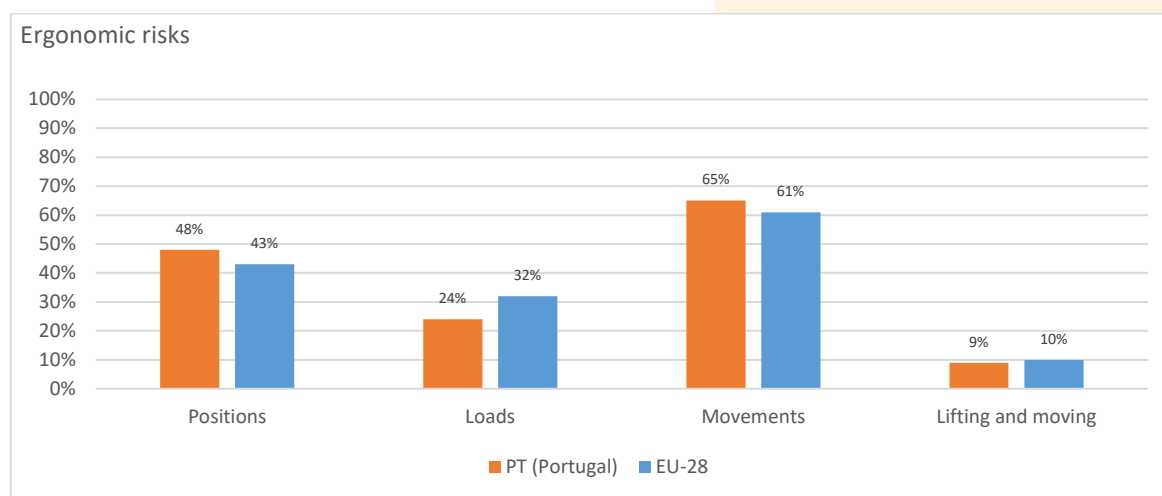


Figure 7b. Workers reporting exposure to vibrations, loud noise and temperature extremes, Portugal and EU-27 (EWCS 2015)

Physical and environmental exposures remain high in Portugal, with little change observed between 2010 and 2015.
Source: EU-OSHA OSH Barometer – European Working Conditions Survey 2010 and 2015.

Figure 8a. Workers reporting repetitive movements and tiring or painful positions, Portugal and EU-27 (EWCS 2010)**Figure 8b. Workers reporting repetitive movements and tiring or painful positions, Portugal and EU-27 (EWCS 2015)**

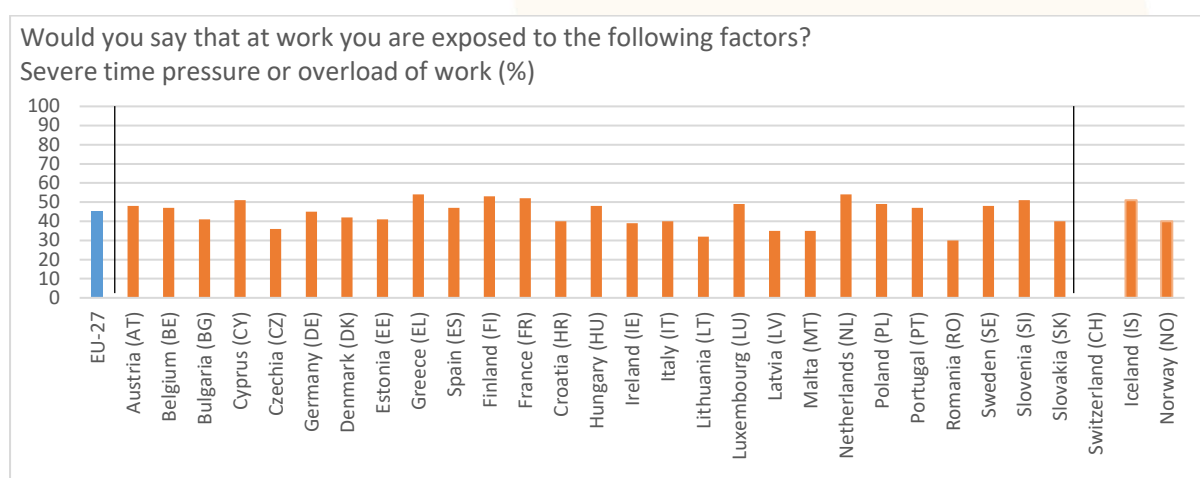
Repetitive tasks and awkward postures affect a large majority of Portuguese workers, showing virtually no reduction over five years. Source: EU-OSHA OSH Barometer – European Working Conditions Survey 2010 and 2015.

Together, these indicators show that reported job-level physical demands remain high, while earlier sections demonstrated that company-level prevention resources have largely stabilised. This combination suggests that physical strain continues to place sustained pressure on workers.

To check whether these pressures may have eased in more recent years, Maria consults the **Psychosocial risks** section of the OSH Barometer (**Working conditions and prevention** → **Working conditions** → **Psychosocial risks**), which draws on the OSH Pulse survey. According to this, in 2022 nearly half of workers in Portugal (47 %) report exposure to severe time pressure or work overload, similar to the EU-27 average (46 %). At the same time, 13 % of Portuguese workers report limited autonomy or influence over their work pace or processes, compared to 18 % in the EU-27.

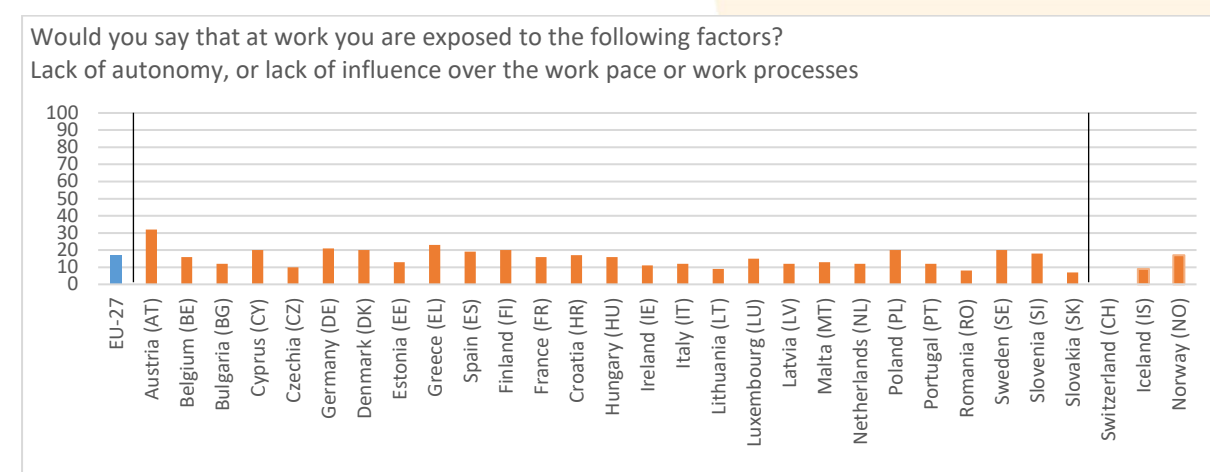
The combination of high demands and low control confirms that, even after a decade of prevention initiatives, everyday strain is reported to remain widespread in the workplace. For Maria, this reinforces the picture emerging from earlier data: work pressures have not declined, while the supports available at job level remain limited. (See Figures 9a, 9b and 10)

Figure 9a. Workers exposed to severe time pressure or overload of work, Portugal and EU-27 (OSH Pulse 2022)

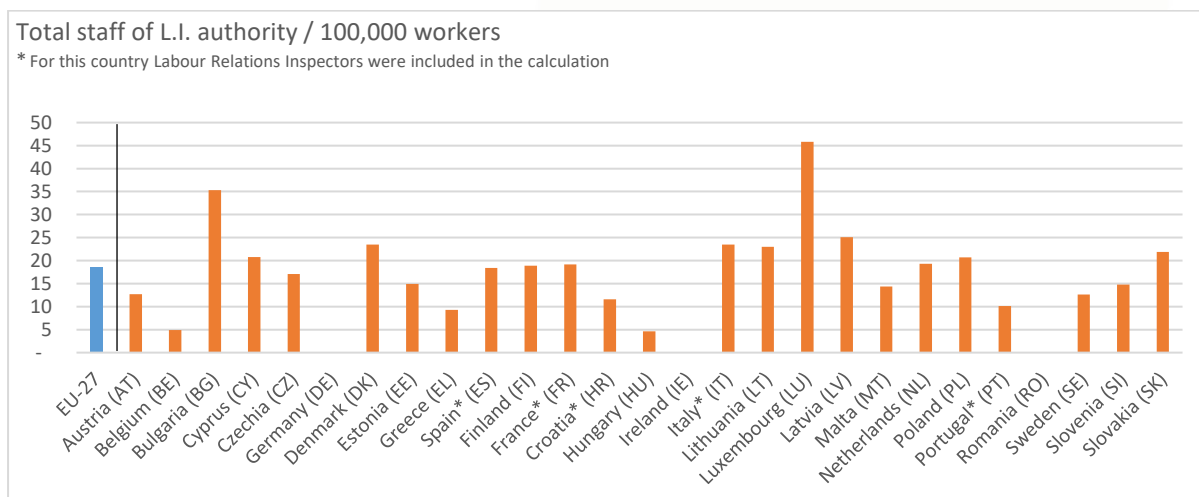


Nearly half of workers in Portugal (47 %) report severe time pressure or overload of work, close to the EU-27 average (46 %). Persistently high figures confirm that job demands remain strong even after years of prevention efforts.
Source: EU-OSHA OSH Barometer – OSH Pulse 2022.

Figure 9b. Workers with low autonomy or influence over work pace or processes, Portugal and EU-27 (OSH Pulse 2022)



About 13 % of Portuguese workers report limited autonomy or influence over their work, compared to 18 % in the EU-27. Low levels of control highlight that job-level resources remain scarce. Source: EU-OSHA OSH Barometer – OSH Pulse 2022.

Figure 10. Total staff of labour-inspection authorities per 100,000 workers, Portugal and EU-27 (2021)

Maria now moves on to examine the **OSH Infrastructure** → **Enforcement indicators** module to see whether system-level capacity has evolved in line with these pressures.

System-level resources

To complete her analysis, Maria turns to the **OSH Infrastructure** → **Enforcement capacity** module. Here she finds data on the total staff of labour-inspection authorities per 100,000 workers. The chart, based on data provided from the National Labour Inspectorates to SLIC, presents the most recent comparative snapshot for 2021.

Portugal's position is immediately visible: with around **10 staff of L.I. authority per 100,000 workers**, it lies well below the EU-27 average of roughly **18**, even though it increased from 10 in 2021 due to new recruitments. Several northern and eastern EU Member States report a capacity that is two to three times higher, while a few western countries show similar or lower figures. As with regards to the number of labour inspectors, Portugal stands just at the EU-27 average value of **10 inspectors per 100,000 workers**. While it's tempting to assume that more inspectors automatically mean fewer accidents, the reality is rarely that simple, as the connection is often blurred by other differences in countries. The cross-section highlights a structural gap that limits the reach of enforcement (see Figure 10).

For Maria, these data represent the system-level counterpart of the imbalances she has already observed at job and company level. Even though regulations and procedures exist, enforcement capacity in Portugal has not expanded in line with workforce size or economic activity. Limited inspectorate resources mean fewer site visits, less follow-up and slower feedback loops between authorities and workplaces. At the same time, the Portuguese system relies heavily on external prevention services, yet the strong marketisation of these services means that prevention is not always fully integrated into companies' day-to-day practices.

*'The system holds, but without reserve', Maria writes.
'We rely on stability rather than growth in protection.'*

The figures on enforcement capacity presented in the OSH Barometer are also consistent with the national information provided in the *SuCo Portugal* review (EU-OSHA – European Agency for Safety and Health at Work, 2025), corresponding to around 10 inspectors per 100,000 workers. This alignment reassures Maria that the OSH Barometer not only visualises comparative European data but also reflects national realities.

For her, this closes the circle of her analysis. Across all levels – the job, the company and the national system – the data show the same pattern: demands seem to remain high while preventive and protective resources look to have stalled at their current limits. The system continues to function, but with little spare capacity, helping to possibly explain why accident rates fluctuate rather than decline.

From data to dialogue

Having explored the different modules of the OSH Barometer, Maria reviews her notes. Each dataset tells a consistent story: accident rates no longer in decline; persistent physical strain; stable prevention coverage; and limited inspection capacity. Taken together, these findings confirm her initial impression that progress in safety and health has become fragile rather than continuous. To organise her observations, Maria summarises the patterns she sees across levels:

Level	Demands	Resources	Outcome
Job	Persistent physical and environmental exposures	Little change in ergonomic design or work pace	Strain and fatigue remain high
Company	Tight schedules, subcontracting, skill shortages	Risk-assessment coverage stable; Small and Medium sized Enterprise (SME) gap persists	Uneven protection
National system	Expanding workforce and complexity	Limited inspection capacity	Oversight stretched thin

From this integrated view, Maria draws three conclusions. First, the apparent ‘safety plateau’ in national statistics hides a possible underlying imbalance: work intensity has increased, while prevention systems have not expanded at the same pace. Second, improvement would not be gained only by new rules but also better diffusion of existing practices to smaller workplaces, where preventive capacity remains limited.

Third, the OSH Barometer is more than a data portal – it provides a common factual basis for social dialogue, enabling all parties to start from the same harmonised indicators.

In her next regional safety meeting, Maria plans to present these findings alongside the OSH Barometer charts. Instead of debating whose data are correct, participants can rely on comparable European data and move directly to discussing solutions. She hopes that this shared ground will help shift the debate from whether there is a problem to how to address it.

*‘Numbers alone don’t prevent accidents’, Maria writes in her final note.
‘But they help us see where prevention has stopped growing – and where it needs to start again.’*

Deep-dive box: the Job Demands-Resources (JD-R) Model

What is the JD-R Model?

The Job Demands-Resources (JD-R) model (Demerouti et al., 2001; Demerouti & Bakker, 2023; Bakker, Demerouti & Sanz-Vergel, 2023) is a framework in occupational health psychology for understanding how work characteristics affect worker well-being, motivation and performance.

- **Job Demands** are aspects of work that require sustained physical or psychological effort (e.g. workload, time pressure, emotional demands, physical strain). High demands can exhaust workers and impair their health.
- **Job Resources** are aspects of work that help achieve goals, reduce demands or stimulate growth (e.g. autonomy, social support, training, feedback).

Levels of demands and resources

According to Demerouti and Bakker (2023), demands and resources exist at multiple levels:

- **Personal** (e.g. resilience, optimism)

- **Family** (e.g. support at home)
- **Job** (e.g. workload, supervisor support)
- **Organisational** (e.g. policies, culture)
- **State/national** (e.g. legislation, inspection capacity)

Two key processes in the JD-R Model

1. **Health impairment process:**
Excessive job demands lead to strain, exhaustion and health problems.
2. **Motivational process:**
Abundant job resources foster engagement, motivation and positive outcomes.

Interaction effects

Resources can mitigate the negative impact of demands. For example, high social support can reduce the harmful effects of high workload. Conversely, risk factors (e.g., discrimination, poor communication) act as additional demands, further exhausting workers and impairing health.

Looking at the OSH Barometer through the JD-R lens

The measures included in the OSH Barometer can be organised into categories that align with the JD-R framework:

- **Demands:** Physical, psychosocial and organisational pressures (e.g. exposure to noise, repetitive movements, time pressure).
- **Resources:** Supports at various levels (e.g. training, ergonomic equipment, supervision, national OSH strategies, inspection capacity).
- **Risk factors:** Additional demands such as discrimination, harassment, poor communication or contextual/personal vulnerabilities. These amplify the health impairment process.
- **Outcomes:** Health and safety results (e.g. accident rates, musculoskeletal disorders, job satisfaction, self-rated health).

Logic of categorisation

- **Demands and risk factors** are grouped as pressures that can exhaust employees and lead to negative outcomes.
- **Resources** are grouped as supports that can buffer demands, promote motivation and improve outcomes.
- **Outcomes** reflect the balance (or imbalance) between demands, resources and risk factors.

Function of categories

- **Demands:** Identify what is challenging workers at different levels.
- **Resources:** Show what is available to support and protect workers.
- **Risk factors:** Highlight additional pressures that may require targeted interventions.
- **Outcomes:** Track the results of the interplay between demands, resources and risk factors.

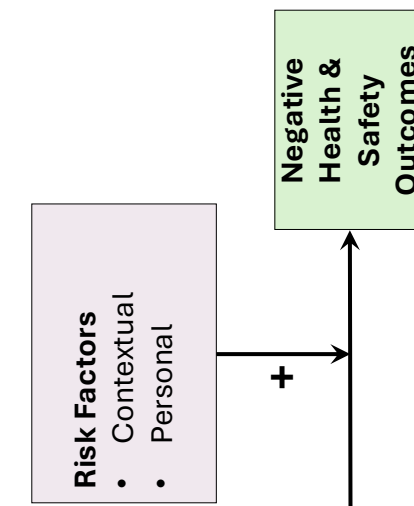
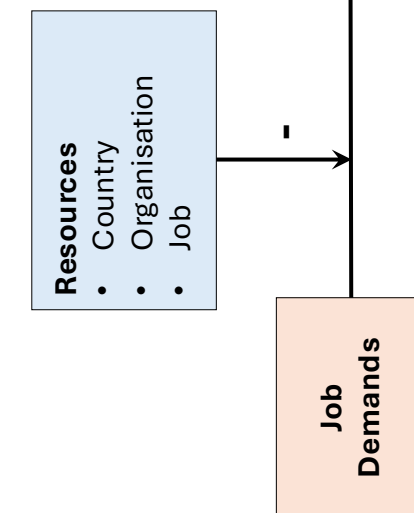
Why this matters

This structure allows users – trade unions, policy-makers and others – to diagnose where the balance is lost, understand the root causes of health and safety issues, and identify where interventions (increasing resources or reducing demands/risk factors) are needed.

Country Resources	
OSH legislative framework existence	EU-OSHA policy mapping
Existence of national OSH strategy	EU-OSHA policy mapping
Use of OSH services	
Risk assessments conducted	ESENER
OSH training in enterprises	ESENER
Companies with OSH representative	ESENER
Companies with a risk assessment in place	ESENER
Companies that document risk assessments	ESENER
Companies with preventive services (internal or external)	ESENER
Companies with plan to prevent psychosocial risks	ESENER
Companies with procedure for absenteeism	ESENER
Decision authority	
Skill discretion	EWCS
Satisfaction with working conditions	EWCS

Contextual Risk Factors	
Proportion of temporary agency workers	Eurostat
Proportion of workers with fixed-term contracts	Eurostat
Proportion of part-time workers	Eurostat
Share of workers aged 55–64	Eurostat
Share of non-EU migrants	Eurostat
Gender employment gap	Eurostat
Share of workers in high-risk sectors	Eurostat
Labour inspections	SUC reports
Employment contract type (permanent, temporary)	
Working hours (full-time, part-time)	Eurostat, LFS
Migrant status	Eurostat, LFS
Gender and age structure	Eurostat
Perceived health risks at work	LFS-AHM

Job Demands	
Poor communication	ESENER, EWCS
Dealing with difficult clients	ESENER, EWCS
Discrimination and harassment	EWCS
Exposure to noise	EWCS, ESENER
Exposure to vibration	EWCS, ESENER
Exposure to high or low temperatures	EWCS
Exposure to chemical agents	EWCS, ESENER
Exposure to biological agents	EWCS, ESENER
Repetitive hand and arm movements	ESENER
Lifting/carrying heavy loads	ESENER
Tiring or painful positions	EWCS
Physical inactivity (sitting)	ESENER
Night work	Eurostat, LFS
Shift work	Eurostat, LFS
Weekend work (Saturday, Sunday)	Eurostat, LFS
Exposure to infectious agents	EWCS
Workers with high job strain	EWCS
Prolonged working in tiring or painful positions	EWCS
Use of chemical or biological products	EWCS
Prolonged standing or walking	EWCS
Carrying or moving heavy loads	EWCS
Vibrations from hand tools or machinery	EWCS
Noise (loud or very loud)	EWCS
High or low temperatures	EWCS
Decision authority	EWCS
Skill discretion	EWCS
Satisfaction with working conditions	EWCS



- There are **differences in Negative Health and Safety Outcomes** between Countries, Industries, and over Time
- These differences can be explained by differences in **Job Demands**
- Resources** on level of the Country, Organisation and Job can **buffer** these differences
- Contextual and Personal Risk Factors** and **amplify** these differences

Health & Safety Outcomes	
Non-fatal work accidents	ESAW via Eurostat
Fatal work accidents	ESAW via Eurostat
Severe accidents (>3 months or permanent disability)	ESAW via Eurostat
Musculoskeletal disorders	EWCS
Respiratory conditions	EWCS, EODS
Mental health conditions	LFS, WHO estimates
Work-attributable deaths	WHO/ILO, IOOH
Disability-Adjusted Life Years (DALYs)	WHO/ILO, IOOH
Job satisfaction	EWCS
Self-rated health	EWCS
Expected ability to work until age 60	EWCS
Work-related deaths (fatal accidents only)	WHO/ILO, IOOH
Work-related deaths (fatal accidents)	ESAW
Non-fatal accident rate	ESAW
Severe non-fatal accident rate	ESAW
Self-reported work-related health problems	LFS-AHM
Musculoskeletal disorders prevalence	EWCS
Self-rated general health	EWCS
Life expectancy at age 65	Eurostat
Disability-adjusted life years (DALYs)	WHO/ILO, IOOH
Job satisfaction	EWCS
Expected ability to work until age 60	EWCS
Absenteeism due to work-related health issues	LFS-AHM

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Appendix 1: The OSH Barometer – Structure and Data Sources

Purpose and background

The OSH Barometer is an initiative of the European Commission's Directorate-General for Employment, Social Affairs and Inclusion (DG Employment) and the European Agency for Safety and Health at Work (EU-OSHA). It provides up-to-date, harmonised information on occupational safety and health (OSH) in the EU. The OSH Barometer supports evidence-based policy-making and social dialogue by offering reliable and stable data on OSH status across Europe.

The platform can be accessed at: <https://visualisation.osha.europa.eu/osh-barometer/>

Main data sources

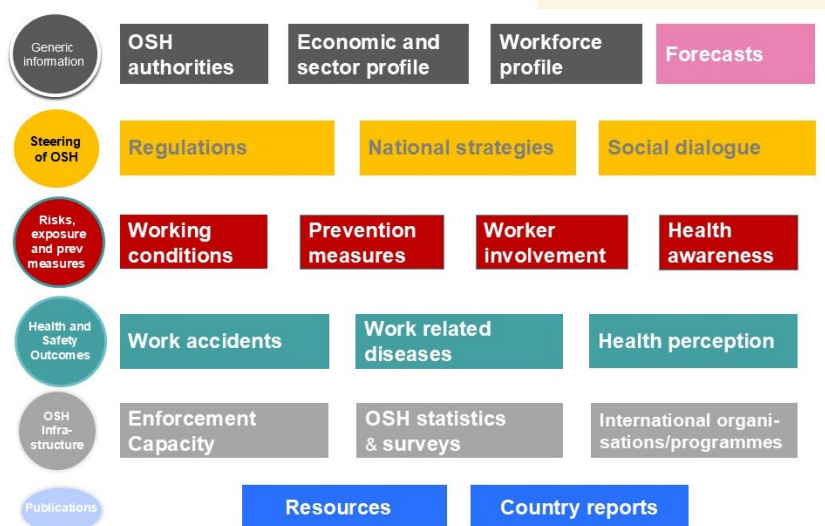
- Eurostat: Economy, sectors, population, employment, ESAW, Labour Force Survey (LFS), EU-SILC
- Eurofound: European Working Conditions Survey (EWCS)
- EU-OSHA: ESENER survey, OSH Pulse Flash Eurobarometer, OSHwiki
- Cedefop: Skills forecast
- European Commission DG Employment: Reports and studies
- Senior Labour Inspectors Committee (SLIC): Country evaluations and annual reports
- National contact points and EU-OSHA focal points: National OSH system descriptions
- Comprehensive reports from national or European sources

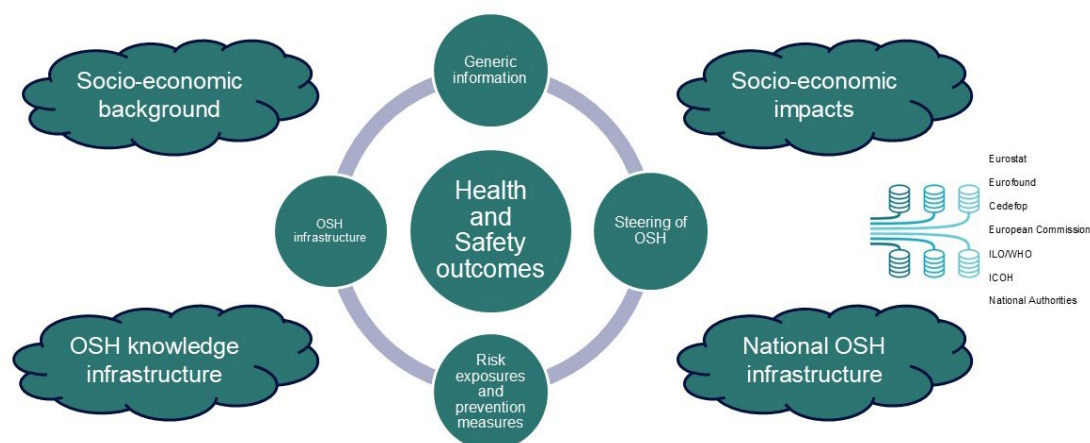
Structure and modules

The OSH Barometer is organised into several modules that allow users to explore OSH data at different levels:

- Steering of OSH
- Working conditions and prevention
- Accidents, diseases and well-being
- OSH infrastructure
- Socio-economic background and impacts
- Health and safety outcomes
- Risk exposures and prevention measures

Visual overview





Organisation of information

Information in the OSH Barometer is organised by country, sector and topic. This structure enables cross-country and cross-sectoral comparisons, helping stakeholders identify trends and patterns in OSH performance.

Methodological notes

The OSH Barometer harmonises definitions across Member States and integrates data from multiple sources, including employers, workers and authorities. This triangulation enhances the reliability of cross-country comparisons and supports a balanced understanding of preventive capacity and exposure.

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