

NORWEGIAN LABOUR INSPECTORATE'S RISK-BASED STRATEGY: SUPPORTING OCCUPATIONAL SAFETY AND HEALTH COMPLIANCE (CASE NO1)

Introduction

Promotion of effective occupational safety and health (OSH) practices is a key element of safer and healthier workplaces. Improving arrangements and practices for managing OSH across a whole range of industry sectors and firm sizes — large, medium and small — is stimulated, supported and sustained by a range of institutional actors and processes both internal and external to firms. Scientific research highlights, among other things, the critical role that state regulators, such as labour inspectorates but also prevention services, can play in OSH (EU-OSHA, 2021). This case study is part of a research project¹ conducted in Norway to provide further insight into this topic.

In this case, the Labour Inspection Authority's risk-based strategy for conducting inspections in the Norwegian labour market is described. The Norwegian Labour Inspection Authority supervises more than 220,000 land-based enterprises with employees in Norway. An additional 430,000 enterprises without employees have statutory duties under parts of the working environment regulations. Together, these enterprises are characterised by a number of different working environment challenges and varying degrees of ability and willingness to address them. As it is not possible to carry out inspections in all enterprises within a reasonable time frame, the Labour Inspection Authority has implemented a risk-based strategy with the aim of reaching the industries, businesses and parts of the workforce that face the greatest risks (Dahl et al., 2018). The following presents a description of the case, including aims, activities, achievements and transferability to other EU Member States.

Description of the case

Aims

One of the Labour Inspection Authority's long-term goals and priorities is for its efforts to be resource efficient, risk-based and precise (Norwegian Ministry of Labour and Social Inclusion, 2023). To achieve this, the Authority's efforts must be directed at the areas of the labour market where the challenges are the greatest. The aim of the Authority's risk-based strategy is to reach the parts of the labour market, hereunder industries, enterprises and specific actors, that face the highest risks. The assessment of risk is based on an evaluation of which workers face the highest risk of becoming ill, being injured or being exploited due to their working conditions.

In their annual allotment letters to the Labour Inspection Authority, the Ministry of Labour and Social Inclusion states the objectives to be prioritised by the Authority in the following year. With these objectives as a base, the Authority annually develops an overview of what parts of the Norwegian labour market face the highest risks in a document called a risk picture. The risk picture is developed by the organisation's analysis department. Together, the guidelines from the ministry and the risk picture provide the foundation for the Authority's inspection priorities, aiming to achieve compliance with OSH regulations in Norwegian working life (primarily the Working Environment Act (WEA) with the applicable regulations).

Organisations involved

Numerous informants were relevant when discussing this case as the strategy largely influences the ways in which the Authority carries out its work. The risk-based strategy was discussed in our interviews with the Ministry of Labour and Social Inclusion, members of the Labour Inspection Authority's council

¹ The full report is available at: <https://osha.europa.eu/en/publications/norways-approach-supporting-occupational-safety-and-health-compliance-role-labour-inspectorate-and-prevention-services>. Other case studies can be found in the report.

representing the social partners, a representative from the Authority's division for working environment and regulations, and inspectors from the Authority, as well as a representative from a private enterprise obligated to have an occupational health service and regional safety representatives.

What was done, and how?

Basic structure

One of the Labour Inspection Authority's primary sources of data is findings from previous inspections. The Authority has registers of all these findings in a database within their administrative IT system. The data include the location of the inspection, the name of the business, the economic sector, what the inspectors investigated during the inspection, the results of the inspection, and the recommendations the business has been given by the Authority.

Further, the Authority has access to all notifications the organisation has received. The organisation's department for applications and messages receives all tip-offs from employers, safety representatives, workers and others and distributes them between inspection departments as they see fit. The department can also choose not to follow up on the tip-offs they do not find relevant. In addition to these tip-offs, the Authority keeps records of serious personal injuries that have been reported, as well as of reported work-related illnesses (RAS notifications)². All doctors must report illnesses they believe result from their patient's work situation (Norwegian Labour Inspection Authority, n.d.) as RAS notifications. One of our informants noted that these data sources must first and foremost be used as clues as they are not necessarily representative.

From external sources, the Labour Inspection Authority uses data from the national statistical institute of Norway (Statistics Norway). Some of the people who were interviewed highlighted that while some issues are highly under-reported, such as work-related illnesses, these statistics can provide some indications, for instance on what types of illnesses occur the most often in certain industries. For more representative numbers on the scope of various working environment issues, the Authority uses analyses from STAMI, which is the National Institute of Occupational Health in Norway. One of STAMI's objectives is to present knowledge about risk factors and preventive measures in relation to occupational health (STAMI, 2023). Psychosocial risks are also included in the analysis.

Based on these sources of data, the Labour Inspection Authority has developed a prediction index, sorting enterprises into four different risk categories. Risk category 1 includes enterprises predicted to have the lowest risks, while risk category 4 includes enterprises predicted to have the highest risks. The index is used for planning inspections. Based on the index, the inspection departments receive lists according to risk and are instructed to carry out inspections among enterprises within a certain risk group with a certain number of employees in a specific industry. Each division can therefore choose which enterprises to inspect, using these samples as a basis and also taking information like tip-offs, RAS notifications and local knowledge into consideration. Sometimes, the division leader makes these decisions, and other times, the available information is evaluated by an internal group.

Some of the inspectors who were interviewed emphasised that in addition to the prediction index provided by the Authority, their own experiences were highly important when deciding which business to inspect. Many inspectors have long experience from carrying out inspections in different industries and with different aims (from psychosocial to musculoskeletal working environment factors). Further, inspectors often have local knowledge about enterprises and their activities. Nevertheless, the inspectors reported that it was important to use several tools and databases to get a thorough picture. Because of their differing competences, inspectors also reported that they sometimes performed inspections together. Carrying out inspections in different areas together instead of separately makes the Authority appear as a unified organisation to enterprises.

Further, there are some geographical differences in terms of the risk-based samples of enterprises the inspection divisions are presented with. For example, the land-based fish processing industry is far more prevalent in the northern and western parts of the country than in the capital region. Some of our informants also mentioned that there are quite large variations between regions and industries in terms of how many enterprises are listed in risk categories 3 and 4 (representing the largest risks).

² RAS notification in Norwegian, is the abbreviation for "notification on work-related illness".

Improvements

The prediction index, as the name suggests, provides predictability, but it cannot be used as a blueprint. Some of the informants emphasised that the index poses a challenge for inspectors who have worked in the organisation for a long time as the lists they receive to choose enterprises from can seem quite limiting. These inspectors may find themselves with knowledge that does not always fit the index. Some of our informants added that for inspectors who have been employed in the organisation more recently, the lists are considered quite useful.

One of the inspectors interviewed emphasised that the checklists the inspectors use during inspections are sometimes too rigid. The checklists are developed at the national level and accessed through the organisation's administrative IT system. These are the lists the inspectors report on. The informant noted that, for instance, these checklists do not include control points related to regulations concerning violence and threats. Therefore, the inspectors must add these control points themselves. The inspector considered this unnecessary as violence and threats are part of the full risk picture. Another informant had a different view of these checklists, describing them as quite broad and adjustable. The lists are divided into three sections, one of which is kept quite open for the inspectors to adjust.

Through interviews, it was reported that the risk assessment using the four risk categories is not equally suitable for all types of inspections. For instance, one of the inspectors, who works mainly in the construction industry, noted that many inspections are based on tip-offs and observations, as well as on local knowledge of where the construction activities are taking place. Breaches of safety regulations are often found through unannounced inspections in enterprises classified in every risk category. The same argument was made by another inspector:

"When looking at the four risk groups, many enterprises that end up in groups 1 and 2 could have been in groups 3 or 4 as well, when you add our local knowledge. Then you must overrule the risk evaluation." - Inspector, Labour Inspection Authority.

This inspector emphasised that factors like a lot of local media attention, tip-offs and buzz concerning a specific enterprise are also important to note when deciding where to carry out an inspection. Nonetheless, among our informants, the inspectors who used the Authority's prediction index in their daily work generally expressed that the risk assessment, local knowledge, tip-offs and RAS notifications complement each other to give the best idea of which businesses to inspect based on risk.

It was also noted by one of the informants who works with the prediction index in the Authority that one improvement would be having access to more data, as well as more accurate data. More detailed statistics on work-related injuries was mentioned as an example. Further, it was suggested that the inspectors' notes and impressions from their inspections should be registered and analysed as well. The aim of this would be to highlight inspectors' experiences and thoughts on what can be learned from the inspections and hence take advantage of easily available knowledge.

Target groups

As the Labour Inspection Authority's risk-based strategy, including the prediction index, is directed at identifying the industries, enterprises and actors that pose the largest risk, the Authority's inspectors are considered to be the main target group. Further, industries, enterprises and specific actors are also targeted, in the sense that they are classified into these four risk categories. Our informants told us that there are seldom geographical differences in terms of the types of industries or enterprises that have the highest risks but rather there are variations in industry structures. 'Industry' is the largest variable in the Authority's risk evaluation strategy.

Degree of effectiveness / success factors

The Norwegian Labour Inspection Authority considers the risk-based strategy's degree of effectiveness to be high when all measures available are utilised. Measures available include the Authority's data from previous inspections, registered in the organisation's administrative IT system, tip-offs, RAS notifications, and statistics from STAMI and Statistics Norway, together with the inspector's local knowledge and insights based on previous experiences. According to interviewees, this range of measures enables inspectors to plan and carry out inspections in the industries and enterprises characterised by the highest risk. It must be added that improvements can always be made. Key informants mentioned access to more comprehensive data on matters like work-related injuries and less rigid checklists for the inspectors as possible measures to further improve the risk-based strategy.

Supervision/sanctions or prevention?

The Labour Inspection Authority's risk-based strategy is dual. On the one hand, the strategy lays the basis for inspections to be carried out to supervise enterprises considered to be high-risk. Further, inspectors have the authority to impose sanctions when they discover breaches of the OSH regulations during these inspections. On the other hand, the Authority works preventively by visiting these high-risk industries, enterprises and actors. Through these inspections, the Authority illustrates its presence to actors operating on the edge of the law and provides pointers and guidance to employers to help them comply with OSH regulations in Norwegian working life.

Influencing factors considered in the supervisory institutions and prevention services

As the Authority has approximately 600 employees and 220,000 enterprises with employees are under its aegis, the organisation acknowledges that it must be strategic when choosing where inspectors should carry out inspections to reach the industries, enterprises and actors where the risk of finding breaches of the OSH regulations is considered highest.

Roles for managing the Authority's risk-based strategy are distributed throughout the organisation. For instance, the organisation's analysis department annually develops its risk picture. Further, tip-offs regarding breaches of OSH regulations are managed by the organisation's applications and messages department. Initial decisions are therefore made at the central level while the inspectors' local knowledge, experience and various competences lay the groundwork for the secondary evaluations made at the local level.

Degree of innovation

The system the Authority uses for its risk-based strategy represents a new degree of innovation for the organisation. When developing its IT system, the Authority looked to neighbouring countries but also used its own competences. The aim was to develop a system where all inspection activities and information are registered in the same database. The idea was for the Authority to use the data it already had available to recognise patterns of serious breaches of OSH regulations. To do so, the Authority has used regression analysis to calculate the probability of such risks.

Further, the algorithms were trained to become precise. The Authority has ended up with a machine learning system where the machine is trained to trace information back to the enterprises that have characteristics that are often linked to high risk. The Authority considers its predictions to be 80% accurate. When a new business is established in Norway today, it is automatically registered in the system. As previously presented, businesses are divided into four categories from the highest to the lowest risk. Characteristics of similar enterprises are used for this classification, and all variables that affect predictability are used. The Authority then defines an independent variable and tests the contributing variables to increase the level of explanation.

The model currently in use, is being trained and improved every month based on the data the Authority has available. If the same data are used over and over, it will only produce the same results. However, the Authority also carries out a lot of inspections where the prediction index is not used to select the inspection object.

Sustainability and practicability

In the future, the Authority is planning to expand its use of machine learning for inspections. One tool that is currently being developed is 'smart checklists'. The thought is that inspectors should be able to register that they are planning to inspect a specific business in a specific area and the tool will help them formulate the checklist for the inspection. Inspectors should also be able to update the checklist as they go, and receive suggestions for follow-up questions generated by the tool. However, this tool is still in the pilot stage as it faces some administrative challenges.

Results / What was achieved?

In their annual reports, the Authority has shown that inspectors uncover and address a larger share of working environment challenges through inspections carried out in enterprises considered high-risk than in those considered to have lower risks. In their report from 2018, the Authority showed that while

the share of inspections that led to reactions in risk group 1 amounted to 49%, the share of inspections leading to reactions in risk group 4 was 78% (Norwegian Labour Inspection Authority, 2018).

As previously explained, it appears that the range of measures available to inspectors enables them to plan and carry out inspections in the industries and enterprises characterised by the highest risk. It is important to note that, in addition to data from previous inspections, RAS notifications, tip-offs and statistics, inspectors' local knowledge and insights based on previous experiences and expertise within their field are also decisive for the effectiveness of the risk-based strategy. Inspectors add valuable insights that are not necessarily covered by the prediction index.

Transferability to EU Member States

Some of the informants expressed that the Labour Inspection Authority's risk-based strategy has valuable aspects that can be of use for EU Member States as well. The Labour Inspection Authority also looked to neighbouring countries when developing its approach. Nonetheless, some informants also noted that the tools that are used for the strategy are based on nationally determined processes, such as direction from the Ministry of Labour and Social Inclusion, or on data from national research institutes. Therefore, whether a similar approach could work in another country would depend on what tools are available in that country, as well as how many inspectors there are. One of the informants noted that the strategy was recently presented in EU Member States and was met with great interest.

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