



MiningWatch, Belgium

Title of the policy or measure (in English)	MiningWatch
<ul style="list-style-type: none"> • Case study/good practice name 	MiningWatch: using data analytics for targeted inspections of social security fraud
<ul style="list-style-type: none"> • Country 	Belgium
<ul style="list-style-type: none"> • Sectors 	Construction, cleaning, and the hotels and catering sector
<ul style="list-style-type: none"> • Target groups 	Employers
<ul style="list-style-type: none"> • Type of measure 	Deterrence: improve detection
<ul style="list-style-type: none"> • Short sentence summarising the measure 	MiningWatch is a data mining tool which uses predictive modelling to define fraud risks in three different sectors: construction, cleaning and the hotels and catering sector. The analytical tool supports inspectors in choosing inspection targets.
Background	
<ul style="list-style-type: none"> • Background context driving the implementation of the measure 	The measure was introduced to increase the efficiency and effectiveness of the fight against social fraud in the context of budget and human resource constraints
<ul style="list-style-type: none"> • When was the measure implemented? (including start date and end date/ongoing) 	January 2015 – ongoing
<ul style="list-style-type: none"> • Names(s) of authorities/bodies/organisations involved 	Social Inspectorate, Federal Public Service (FPS) Social Security, and from 1 July 2017 the National Social Security Office (NSSO)
<ul style="list-style-type: none"> • Scope of the measure (a pilot project, nationwide, regional wide) 	Mainstream measure implemented at national level
<ul style="list-style-type: none"> • Type of (policy) measure 	Data mining tool
<ul style="list-style-type: none"> • Key objectives of the measure 	<p>General objectives:</p> <ul style="list-style-type: none"> - to optimise social fraud detection <p>Specific objectives:</p> <ul style="list-style-type: none"> - to increase social fraud detection without putting strain on the budget and expanding the numbers of inspectors - to enhance flexibility in order to deal with the increasing complexity and sophistication of frauds - to facilitate knowledge sharing between inspectors
Specific measure	
<ul style="list-style-type: none"> • Description of how the measure operates in practice 	<ul style="list-style-type: none"> • The data mining tool, MiningWatch, was integrated into an enlarged data warehouse which was already being used by FPS Social Security;

	<ul style="list-style-type: none"> • The tool supports inspectors across the country to target their inspections based on the predictive risk modelling of fraud. This includes offences such as undeclared work, abuse of part-time working schemes, and bogus self-employment; • MiningWatch allows inspectors to choose the sector, type of offence, and region/sub-region. Based on the predictive models, the search results rank companies according to their risk level: red (high), orange (elevated), green (medium), and blue (low). • On average 70 % of investigations conducted by inspectors are imposed on them following official requests for investigation (public prosecutor, other inspection services) and complaints. The remaining 30 % of inspections are based on the inspector's own initiative. The general objectives for 2016 included the objective for inspectors to base 30 % of their own initiative inspections on MiningWatch data.
<ul style="list-style-type: none"> • Which groups are targeted by the measure? 	<ul style="list-style-type: none"> - Inspectors (directly) - Employers and workers involved in undeclared work (indirectly)
<ul style="list-style-type: none"> • What resources and other relevant organisational aspects are involved? 	<p>The annual costs amount to EUR 200 000 including software licence and service provider costs.</p> <p>The core team consists of 10 staff members: analysts, IT staff and inspectors with specific training in the use of the tools. In addition, another 50 staff members are involved in the implementation of MiningWatch. A task force of inspectors was set up to verify the accuracy and effectiveness of the predictive models which are defined by the core team.</p>
<ul style="list-style-type: none"> • What are the source(s) of funding? 	<p>FPS Social Security budget</p>
<p>Evaluation and outcome</p>	
<ul style="list-style-type: none"> • Has the measure achieved its objectives? 	<p>The objective of increasing detection rates has been exceeded - detection rates having significantly increased since the introduction of MiningWatch. The data mining platform also functions as a knowledge management tool, allowing for the exchange of knowledge and experiences between colleagues throughout the country and also provides access to statistics.</p>
<ul style="list-style-type: none"> • Assessment method (including indicators used to measure its impact), and the outputs and outcomes achieved 	<p>User data is analysed every month to improve usability and effectiveness of the tool. On the basis of the analysed data and in collaboration with the taskforce, scoring, risk levels and risk profiles are being improved.</p> <p>Detection rates have increased with average detection rates being at 50 % for employer profiles identified as being at higher risk of temporary lay-off fraud in the construction sector. Initial predictions suggested a rise from 16 % to 45 %.</p>
<ul style="list-style-type: none"> • What are lessons learnt and the key conditions for success? 	<p>Lessons learnt include the following:</p> <ul style="list-style-type: none"> • Not to underestimate the complexity of the available data; • The importance of factoring in sufficient time to optimise data to improve data quality; • Involving all users of the tool (inspectors) early in the development process to ensure comprehensiveness and applicability of the tool, i.e. increase awareness and usefulness of the application by all users of the tool; • Engaging users of the tool in validating the predictive models used in order to ensure their accuracy.

<ul style="list-style-type: none"> Level of transferability (e.g. other countries/groups/sectors) 	<p>The level of transferability depends on several factors:</p> <ol style="list-style-type: none"> 1. Availability of administrative data; 2. Possibility of transfer of confidential data; and 3. Collaboration between different authorities, bodies and organisations.
Additional information	
<ul style="list-style-type: none"> Contacts 	<p>Tom De Lust, Business Analyst, National Social Security Office. Email address: tom.delust@onsrszls.fgov.be</p>
<ul style="list-style-type: none"> Sources 	<ul style="list-style-type: none"> • Interview on 2 August 2017 with Christophe Zutterman, Tom De Lust and Sébastien Kondov, National Social Security Office • Presentation held at European Platform tackling undeclared work Thematic Review Workshop on data mining for more efficient enforcement (June 2017)
<ul style="list-style-type: none"> Metadata and key words for online search 	<p>Belgium; undeclared work; detection; social fraud; construction; cleaning; hotels and catering sector; data mining; MiningWatch</p>