

SUMMARY OF REPORT 2018:5

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## Profiling as a selection method for directed controls

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Swedish Social Insurance Inspectorate

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# Summary

## Profiling as a selection method for directed controls

The Swedish Social Insurance Inspectorate (Inspektionen för socialförsäkringen, ISF) is an independent supervisory agency for the Swedish social insurance system. The objectives of the agency are to strengthen compliance with legislation and other statutes, and to improve the efficiency of the social insurance system through system supervision and efficiency analysis and evaluation.

The ISF's work is mainly conducted on a project basis and is commissioned by the Government or initiated autonomously by the agency. This report has been commissioned by the Government.

In the letter of regulation 2017 the Government commissioned the Swedish Social Insurance Inspectorate (ISF) to survey and analyse the Swedish Social Insurance Agency's work with profiling as a selection method for directed controls. ISF shall, according to the commission, survey and analyse the accuracy, efficiency, and legal security of the method. ISF shall further investigate what kind of controls has been performed in the cases chosen through profiling, as well as the results of those controls regarding one or several benefits. Since the Swedish Social Insurance Agency prefer the term "risk-based" instead of profiling ISF use the terms risk-based controls, risk-based sample selection, risk-based profiles, or risk-based selection methods as corresponding terms to profiling in the report.

The survey focuses on four main issues, based on the Government commission:

- In what way does the Swedish Social Insurance Agency use risk-based sample selection for controls?
- What is the actual result for a subset of benefits where risk-based controls are already in use?
- Is risk-based sample selection an accurate and cost-efficient way to carry out controls?
- How do risk-based selection methods manage legal security seen from a discrimination and integrity perspective?

### *Statistical methods for assessing different types of risk*

Profiling is becoming more prevalent among companies and authorities. A risk-based profile is constructed using statistical methods for assessing different types of risks. Through comparing an amount of background information about individual persons against an actual outcome, risk score

may be calculated, and persons may be categorised in different decision groups, depending on their score. The usage has increased in proportion to the improved access to personal data. Profiling is used within widely differing operations, for example for assessing credit risk or to discover fraud within different areas.

However, risk assessment is nothing new, either in society or within the operations of the Swedish Social Insurance Agency. At a time when the Swedish Social Insurance Agency had no access to the huge amount of data, the risk assessment was mostly performed by individual administrators. When exercising its official powers as a public authority, the administrator has regulations to follow. But there is still a risk that two persons, who are essentially alike, may be assessed differently, particularly if they are judged by different administrators. The prejudices of administrators may lead to dissimilar follow-up of different groups of benefit receivers. Today, the Authority's administration contains a larger part of automatization, which require mechanical identification of different types of risk as well.

#### *Accuracy, efficiency, and legal security*

The Swedish Social Insurance Agency use different kinds of model-based methods for control, not just risk-based. In the report, ISF review all the types of model-based methods used for control, as well as the contexts they are used in. The Swedish Social Insurance Agency is developing models for other benefits than the ones described in the report, though we are not describing these models since they still are in the early stages of development.

Furthermore, we analyse the Swedish Social Insurance Agency's models for risk-based controls from a perspective of accuracy, efficiency, and legal security. ISF defines accuracy as the share of people making mistakes among the people controlled. The efficiency term used in the report entails that the cost for the last control is equal to the amount saved through preventing an erroneous payment. Finally, we use a definition of legal security entailing that individuals should be able to trust that authorities are ruled by legal provisions and that the rules are applied in a conform, objective, and impartial manner.

The survey includes a study of equal treatment regarding temporary parental benefits. The Swedish Social Insurance Agency has advanced the furthest in the work with risk-based controls for temporary parental benefits, which have guided our choice of in-depth survey area. In this benefit the three perspectives of accuracy, efficiency, and legal security are brought to the fore.

Based on the analysis, ISF convincingly establishes that the Swedish Social Insurance Agency's development of risk-based controls, shows that the accuracy is significantly higher than for the other alternatives available today. With small adjustments this may grant equal treatment when using the methods. Methods, which are accurate, as well as treating everyone equally, are great prerequisites for efficiency, if they are used to a sufficient degree. Therefore, it is potentially valuable for the social insurance system that the methods are developed and refined further.

*ISF recommends the following*

The Government should examine the prerequisites for creating clear financial incentives for the Swedish Social Insurance Agency to adapt and optimise the work with controls. The driving force for building systems for efficient controls will increase if the operation had opportunity to use parts of the resources simultaneously saved.

The Government should investigate how controls may be performed while securing integrity and without being contrary to the discrimination prohibition. ISF joins the opinions regarding the need of such an investigation, issued in the Swedish Government Official reports SOU 2017:37 (Qualified welfare criminality prevent, deter, discover, and taking legal measures against) and 2017:52 (Strengthening the personal integrity).

The Swedish Social Insurance Agency and the Government should engage in dialogue regarding correction of the errors the applicants are making due to ignorance or difficulties in interpreting information. If the errors are due to an overly complicated legislation, it may be necessary to simplify the rules.

The Swedish Social Insurance Agency should create a policy for independent certification or ethical assessment of risk-based profiles. The objective for the policy is to grant equal treatment through the use of risk-based sample selection.

The Swedish Social Insurance Agency should stratify the population by risk and take random samples from within each stratum. Sample size should increase with risk, to improve accuracy. Then the probability to be chosen for control will not be limited to those with the highest risk value, but those with a low value would also have a probability of being controlled.

The Swedish Social Insurance Agency should also keep in with randomised controls, maybe within the framework of a stratified sample selection scheme, to estimate the size of the erroneous payments and to update future risk-based profiles. Randomised controls are an important tool for discovery of different types of unintentional errors which preferably can be prevented through other methods than controls.

The areas covered in the recommendations are described further in the following sections.

*The Swedish Social Insurance Agency's controls*

The Swedish Social Insurance Agency perform continuous control operations. Parts of the operation are performed in the administration of cases and is closed to the public. Other parts require some form of communication with the person applying for a benefit.

The communication between the Swedish Social Insurance Agency and the citizens is an important function for increasing the trust for the social insurance. The aim is that the communication shall contribute to a situation

in which people experience that the Swedish Social Insurance Agency is involved in doing the right things and performs controls in the appropriate manner. One way to formulate this is that people, considering to act fraudulent or commit benefit crimes against the social insurance should feel that there is a significant risk of detection. At the same time, people who comply with the rules should not feel that they are under suspicion.

In parallel, the Swedish Social Insurance Agency needs to take action in order to minimise the occurrence of unintentional errors. The unintentional errors could for example consist of persons applying for temporary parental benefit counting their lunch break into the working hours. The number of hours the person refrained from working to take care of their sick child will then be exaggerated.

The amount of unintentional errors within certain benefits is large. Therefore, it is important to develop strategies for identifying such errors. The results of a successful work within these areas results in reducing erroneous payments within the social insurance system, which is an objective as well.

It is important to clarify that an elevated risk for errors according to a risk-based profile not necessary entails that something is wrong. The high risk entails that the probability of something being wrong is so high that there is objective cause for a more detailed investigation of the case.

*The Swedish Social Insurance Agency's profiling models are not only risk-based*

By creating risk-based profiles, the Swedish Social Insurance Agency uses their large amount of stored information about the insured. The data used to create the models does not only include history of applications, decisions, and payments, or demographic information. The data also includes current case information, and behavioural patterns in networks of people and companies. The Authority takes the information into account to assess needs and risks in individual cases.

The objective is to be able to do the assessment in real time, that is during ongoing administration of a case. As a part of this work, the Swedish Social Insurance Agency has developed the IT support system RaKuR (framework for assessment of client needs and risk). RaKuR is a technology infrastructure for administration and running of profiles, and to distribute the selected case to the administration system.

The Swedish Social Insurance Agency work with developing and further adapting models within several areas. The possibilities for the operation area of Selection analysis (Urvalsanalys) to support the administration are large, due to the IT support system RaKuR, and the amount of stored information about the insured.

The Swedish Social Insurance Agency use risk-based controls for temporary parental benefits, attendance allowance, dental care support, compensation for high sick-leave benefit costs, and in some parts of the operation area Control investigation. A control investigation is an in-depth investigation

conducted by the Swedish Social Insurance Agency in cases where the Authority suspects benefit fraud.

The Swedish Social Insurance Agency uses some of the model-based methods primarily to gain more efficient operations control, or to increase service and information to the insured. Those models are used in the administration of housing benefits, housing allowance, and within parts of the sickness allowance.

ISF sees a great potential in these models. Furthermore, ISF assess that it is possible to profit significantly from the reduced number of erroneous payments for the types of controls where the analyst assisted by profiling models have marked cases where upcoming events may affect the right to a benefit or the size of the benefit. It may for example be to notify the benefit administrator for housing benefits that a payment for sickness benefit or parental benefit has been made at the date of the application or later.

*The Swedish Social Insurance Agency must take an overall view of each benefit*

It is essential to take an overall view on the controls within each benefit. It may entail that the legislation needs to become more explicit or to give the Swedish Social Insurance Agency clearer incentives to discover errors. In addition, the Swedish Social Insurance Agency should monitor the distribution of cases selected for control to grant equal treatment.

The Swedish Social Insurance Agency performs undertakings to reduce erroneous payments. Though a more explicit structure is needed regarding how different undertakings within each single benefit should cooperate. For example, within the temporary parental benefits there is no distinction made between intentional and unintentional errors within the risk-based selection method. And as a consequence of too low volumes of the controls neither unintentional, nor intentional errors are found to a satisfactory extent. A large amount of unintentional errors will not be corrected since the turnover of applications are so large that most will never be notified that they have made an error. Such errors must be identified and corrected by other means than control. Furthermore, since the model primarily hit the large amount of unintentional errors, the accuracy will not be good enough to find the intentional errors.

Errors made by applicants due to ignorance or inaccurate information should be corrected through measures to simplify doing it correctly for the applicants. It may be necessary to simplify the regulations when the errors are due to overly complicated legislation. Intentional errors should probably be corrected through an increased risk for discovery.

*Learnings from usage of risk-based controls within temporary parental benefits*

The study of temporary parental benefits shows that the Swedish Social Insurance Agency's use of risk-based controls increases the accuracy, though in their current shape risk-based controls fails on a test for equal treatment. According to the test equal treatment is achieved if the actual

errors discovered through a risk-based profile is in the same proportion as actual errors in a representative sample when looking at different individual characteristics.

ISF take no position when it comes to deciding if the lack of equal treatment is discrimination under the purpose of the Discrimination Act. This is due to ISF, within the framework of the survey not having investigated if all necessary conditions of the Discrimination Act are fulfilled. An issue of indirect discrimination under the Discrimination Act requires that someone is disadvantaged through application of a regulation, criteria, or a procedure which seems neutral but can put persons with a certain sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation or age, unless the regulation, criteria, or procedure has a justified purpose and the measures used are appropriate and necessary to achieve that purpose. This entails that measures with negative effects for certain groups still can be allowed if two requirements are fulfilled. Firstly, the purpose with the measure must be objectively acceptable. It entails that the purpose must be worth protection and important enough to motivate the precedence before the principle of no discrimination. Secondly, the measure must be appropriate and necessary. Within the framework of the survey, ISF has made no such adjustment of interest.

Furthermore, ISF cannot decide if the discrepancy arises due to the method used for the risk-based sample selection or due to further restrictions affecting the sample chosen for control. The method is still under development, though ISF sees a distinct potential in using risk-based controls. The Swedish Social Insurance Agency should continue the work to increase accuracy and legal security in the risk-based selections. It is important to increase the accuracy to minimise the follow-up of persons who are fully eligible for compensation. At the same time, it is important that there is a significant risk of discovery for the others.

Insofar as the Swedish Social Insurance Agency limit the risk-based controls to cases where the highest risk for errors is estimated, such as is done within the temporary parental benefit, there are reasons for the Authority to choose another selection approach. ISF recommends the Swedish Social Insurance Agency to stratify the population by risk and take random samples from within each stratum. Sample size should increase with risk, to improve accuracy. Then the probability to be chosen for control will not be limited to those with the highest risk value, but those with a low value would also have a probability of being controlled. If the stratification is optimally designed, in relation to the population in total, such a method could possibly replace the random selection of today.

ISF recommends the Swedish Social Insurance Agency to analyse the importance of stratification for accuracy and legal security.

To avoid people trying to manipulate the risk of discovery, the Swedish Social Insurance Agency do not want to reveal what kind of information they use in the control work. Though, to assure the credibility of the Authority it is still important that the methods treat everyone in compliance with the rule of law. One way to accomplish this is to make the profiles



used go through a certification or some form of independent ethical assessment by a trusted reviewer.

*The aspects on legal security should be realised at an early stage*

The Swedish Social Insurance Agency may use personal information if there is legal support in doing this. The legal support for using personal information is clear when it comes to the Authority's administration of individual cases. Though the legal support is weaker when it comes to using personal information in the manner the Swedish Social Insurance Agency does in creating risk-based profiles. The Swedish Social Insurance Agency note a need of change in the legal provisions for the Authority's usage of personal information, as provided in Chapter 114 of the Social Security Code. On several occasions, the Authority has submitted requests for legislative changes from the Government. The authority still has gained no hearing regarding this issue.

The Swedish Social Insurance Agency has an important assignment to counteract erroneous payments and deter fraud. To perform this assignment, the Authority need sufficient legal prerequisites. ISF finds it doubtful if the regulation of the Authority's possibilities to use personal information is clear enough in its present format. Personal information may only be used when the purpose of how the information may be used is clearly stated. Under the provisions in Chapter 114 in the Social Security Code, the Swedish Social Insurance Agency may, among other things, use personal information for monitoring, performance management, performance results, performance follow-up, and for evaluation. The monitoring objective the Swedish Social Insurance Agency often refers to the monitoring role of the former Swedish National Social Insurance Board, in relation to the different Social Insurance offices. Now, the Swedish Social Insurance Agency is an authority and do not supervise its own operations. It is far-fetched to fit the Authority's work with the risk-based selections which later may be used for controls in individual cases under the term supervision. The objectives of monitoring, performance management, performance results, performance follow-up, and evaluation should neither be used as support for risk-based controls. The purpose of these objectives is more inclined to be general quality controls of the Swedish Social Insurance Agency's operations.

Furthermore, in the opinion of ISF, it is very important that the Swedish Social Insurance Agency has sufficient legal means to exert its' control commission. To secure that this is performed in a legally secure manner we consider that the legal support must be explicit. The design of this legal support in order to uphold the constitutional requirement of equal treatment must be carefully considered however.

Another central issue which the Swedish Social Insurance Agency needs to consider is the right for the insured to receive information about the occurrence of risk-based controls and the personal information the Authority use during the control work. Issues regarding the Swedish Social Insurance Agency's obligation to inform individuals regarding the information about them the authority handles. The secrecy regulations will probably become more important when the EU General Data Protection Regulation is implemented into the Swedish legislation in May 2018.

To introduce a mode of operation where risk-based controls are used raise legal issues from an integrity point of view concerning how the Swedish Social Insurance Agency may use large amounts of data. Other issues concern the risk of the result of the risk-based controls being indirectly discriminating or that they can single out certain groups of insured. When the possible technology to exert control is very extensive, the legal and ethical limitations fills an important function in granting legal security. Therefore, the authorities should exchange views on what is appropriate for public organs to do, beside the ongoing work with developing the technological possibilities. ISF want to emphasise the importance of the authorities' legal departments to participate in the work with risk-based controls from the initial phase.

In ISFs opinion, the Swedish Social Insurance Agency's Legal department has not been participating to a sufficient degree when the risk-based controls were implemented. The Swedish Social Insurance Agency's replies to the Government has included few or no matters of reasoning concerning the legal aspects on the new working methods. Today, the Legal department is more involved than before, and must approve each new risk-based profile in relation to how personal information is used and the purpose of the usage, which is a positive development. Though, in ISFs opinion, more general considerations regarding the legal appropriateness of the working methods should have been documented in advance, before the Swedish Social Insurance Agency implemented those methods. In ISFs opinion, it is important for an authority to consider the legal risks at an early stage, preferably before a new working method is implemented.

The Swedish Social Insurance Agency continuously must take into consideration other legal aspects, such as the risk of deficient equal treatment.

#### *Increase the incentives for discovering errors*

The performed controls are more accurate today then before risk-based sample selections were being used. The extent of the controls may probably be increased, resulting in an increased trust in the social insurance as well as in gains for the State budget due to reduced erroneous payments. The cost for the extra controls is probably lower than the savings to be made due to reduced erroneous payments.

The driving force in designing systems for efficient control will increase if the Authority get to use parts of the resources they save, a.k.a. the reduced number of erroneous payments. Today, the cost-benefit relation from a national perspective suffers since the controls are financed by the Authority's administrative funding, while at the same time reduced erroneous payments shows as reduced costs in the State budget.