

Popular science summary

In each of the legal proceedings, in which an expert report is carried out, a major concern of judicial institutions is the assessment of the **reliability of expert reports**. These institutions usually do not possess 'special knowledge' from a certain fields of science, which prevents them from verifying these opinions. Assessor's opinion (expert) is therefore an important evidence in the case, i.a. on this basis, judicial institutions make their decisions. This can have far-reaching consequences for the parties of the trial.

Within each expert report, the assessor applies a chosen method, which enables the answer to the questions raised by the judicial institution. However, many of the applied methods involve the application of knowledge and experience of an expert, it can be expected that the experts evaluate the obtained results differently. Homogeneous standards of performance of the expert reports have still not been developed and the methods used by the experts are poorly understood and their reliability has never been controlled. All of this raises legitimate concerns of participants of legal proceedings about the reliability of the evidence that is generated by these methods. There is more and more criticism indicating that there is a need to verify methods applied by the experts.

To verify a method, it is necessary to check whether it is characterized by intersubjectivity. **Intersubjectivity** is a feature that indicates how consistent the results of applying the method under the same conditions are. The higher the level of intersubjectivity is, the more reliable is the method and as a consequence - more credible.

The reason for taking the planned research, is the low level of knowledge in the field of intersubjectivity of the forensic science methods. Although, all of the measurement scales (used within methods) included in the project, are commonly applied by the experts during the execution of the expert reports, their intersubjectivity has never been studied or has been examined to a small extent.

Three classic forensic science measurement scales (in the field of dactyloscopy, handwriting and shoeprint/toolmark analysis) will undergo experiments. 150 experts will participate in the planned study in the field of three different forensic sciences. On the basis of test photographs of the same traces, each of them will have to indicate the characteristics noticed in the trace, assess the value of them and assess the value of the entire trace. Based on the obtained data, the compatibility of their results (intersubjectivity) will be assessed separately for each type of measurement scales.

The primary aim of the project is to broaden the knowledge of intersubjectivity of the measurement scales of different methods. The results of these experiments will indicate, which of the measurement scales are characterized by the lowest level of intersubjectivity and are therefore less credible. It will also be shown, in which aspect of working experts differ most and what should be taken into consideration in order to reduce these differences. Checking the level of intersubjectivity of the individual measurement scales will allow to determine which of them need improvement and development.

The results of the study will significantly increase the reliability of criminalistic examination and will change them into more reliable source of knowledge for judicial institutions. The results of the research can be taken into account by the judicial institutions while assessing the expert reports presented by the experts. This can have a huge effect on the decisions of judicial institutions made during legal proceedings.