

## **Understanding model quality in the context of trustworthiness and value**

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### ***Abstract***

The Office for Statistics Regulation (OSR) provides independent regulation of all official statistics produced in the UK. Statistics are an essential public asset: we aim to enhance public confidence in statistics produced by government by setting the standards they must meet in the Code of Practice for Statistics through the pillars of Trustworthiness, Quality, and Value (TQV).

After finding that our Code of Practice was useful as a framework beyond statistics production and noticing the increasing use of statistics models (or AI) across the public sector, we developed our Guidance for Models: Trustworthiness, Quality and Value. This document provides guidance on how the principles in the Code of Practice can help in designing, developing and using models to improve their Trustworthiness, Quality and Value (TQV) and improve their public confidence.

At the UNECE Machine Learning for Official Statistics Workshop 2023, we would like to present the aspects of our guidance that are applicable to the quality aspects of machine learning in official statistics and contrast these to when machine learning isn't used but the statistical model is still complex. For example, we would cover questions such as:

- is there data of suitable quality?
- what is the right type of model?
- how should model quality and performance be measured?
- what is the difference between explainability and interpretability and what amount of each is acceptable for quality?

We believe users and users, both public and otherwise, should be at the heart of any model decisions and the questions above will be framed in this respect. We will also argue that even though quality is an important principle of official statistics, trustworthiness and value also play an important part in framing the question "When is the quality good enough to provide value and be useful?". For this reason, quality cannot be thought about in isolation.

Our beta version of our guidance was published in August 2022 and we are still gathering specific use cases of our guidance but we hope to present these as well as the theoretical information.