# Regulating AI and statistical models and why assessing quality in isolation is not enough to build public trust.

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**Abstract**

*The Office for Statistics Regulation (OSR) is responsible for regulating official statistics which can assist in the development of policy and inform the public about the world they live in. Our role is to enhance public confidence in statistics and data, and our vision is that statistics will serve the public good. OSR have a variety of regulatory tools to evaluate official statistics and data outputs against our Code of Practice for Statistics, which sets the standards that producers of official statistics should commit to. The Code has three pillars: trustworthiness, quality, and value, which underpin OSR's vision. These pillars are increasingly being used to guide development in areas beyond official statistics and therefore we sometimes refer to them as universal principles.*

*This paper will discuss how these universal principles apply to the development of AI models and the work OSR has done in this space to producing regulatory guidance for models used within the public sector.*

## 1. Introduction

The Office for Statistics Regulation (OSR) has a statutory responsibility to regulate official statistics which serve **the public good**. We do this by using our [Code of Practice for Statistics](#) as a framework to base our judgements which is made up of the three pillars: trustworthiness, quality and value (TQV). As statistics producers look for new and innovative ways to produce their statistics it is inevitable that more sophisticated models will be explored, including the use of models that come under the category of Artificial Intelligence (AI).

OSR is keen to ensure that innovation is encouraged within statistics production, but it is still vitally important that when developing models, all three pillars are understood and considered as equally important. This is imperative so that we can be sure that, even in the age of un-explainable models, we are still regulating official statistics effectively. It is also right that the benefits of statistics be maximised so that everyone in our society can access trustworthy, high-quality statistics that they value. In this paper, we will first outline the guidance that OSR has produced to help analysts and statisticians apply the pillars of TQV to their work and what aspects are applicable to quality and AI. We will then go on to talk about how context is important when determining the quality of models and finally, why quality cannot be considered in isolation when designing and building AI models for the public good.

## 2. OSR'S Guidance for Models: Trustworthiness, Quality and Value

After some initial feedback that our pillars of trustworthiness, quality and value were helping people beyond official statistics production and due to the increasing use of AI models across the public sector; OSR designed a specific guide on how to interpret TQV when planning and developing statistical models. In the guidance, we use the words 'statistical model' to encompass all types of modelling such as machine learning, AI and other more 'basic' modelling such as linear regression.

Our guidance is split into two sections and highlights considerations when (1) planning a model that serves the public good and (2) developing and using a model that serves the public good. The guidance covers key areas such as transparency, explainability, data quality and accountability and each area comes with a checklist for quick quality assurance if needed.

But why did we produce this guidance and not simply a document on model quality? Because models, in the public sector, quality cannot be thought of in isolation.

## 3.Why uses and users are important when considering quality

The quality that is needed for a model is highly dependent on who wants to use it and what they want to use it for. For example, a model which is built by a supermarket to provide shoppers with recommendations for items they might want to buy has a relatively low risk associated with it. The worst that can happen if the model gets it wrong is that the shopper decides to buy something else. However, if a model is being used to make a diagnosis or to decide the outcome of an application then the risk is higher and a low-quality output is likely to cause a public backlash. The same can be said about users. If a user is shown to be trustworthy and acting in the best interest of the public then models with reasonable quality might be more accepted than those from companies wishing to make monetary gains. The public's view of the use of AI by different organisations is discussed in the 'Public attitudes to data and AI: Tracker survey' by the Centre for Data, Ethics and Innovation and shows the importance of use and user.

**4. Why does the trustworthiness and value of AI also need to be understood to properly assess the impact of quality on public trust?**

Although quality is often considered first when assessing whether a model is fit for purpose, it isn't the only metric that is needed to build trust. A model could have a high precision and/or recall but if it isn't made transparent to those which are affected by its outputs then it's less likely to be trusted. The same is true for data governance and ensuring that data input and output of a model is managed effectively. When it comes to value, a model is only valuable if it's accessible and relevant to its users. A model considered low-quality by some could still be valuable to others as long as it provides insights and is caveated appropriately.

**5. References**

Barrington, E., Baseley, E. and Hodge. M, (2022), Guidance for Models: Trustworthiness, Quality and Value, Office for Statistics Regulation. Available at Guidance for Models: Trustworthiness, Quality and Value – Office for Statistics Regulation (statisticsauthority.gov.uk)

Centre for Data Ethics and Innovation (2022), Public attitudes to data and AI: Tracker survey. Available at: Public attitudes to data and AI: Tracker survey - GOV.UK (www.gov.uk)