



Models for policy decision-making

The questions you need to ask when confronted with **model-based evidence**

Policy decisions must be transparently informed by evidence. Models are a key part of building that evidence: instruments to investigate the relationships between phenomena and to analyse the impacts of policy options.

Models

Models are computer-based, quantified analytical representations of the real world used to make projections or to assess the behaviour of a system under specific conditions. They help us to make sense of complex information and to present that information clearly and coherently. Model results are increasingly used as evidence in support to policy making across a wide range of policy areas.

In most cases, **models** are designed to better understand a complex reality rather than to predict the future. Their strength is therefore not in providing a precise result but in revealing the relationships between variables: does an increase in x and y lead to unexpected behaviour of z?

Models should be interpreted within their defined purpose and scope, because when the context changes, the assumptions of the model may no longer be applicable.

Their use in evidence-based policymaking

To understand, use and communicate this kind of evidence, models need to be transparent and open to scrutiny, and be accompanied by discussion about the weight that can be put on them.

2021 EU Conference on
modelling for policy support
WORKSHOP • We need to talk
about models



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When interpreting the findings of models for policy, **transparency** builds the confidence of decision makers, the public and other stakeholders. Transparency is achieved with openness of data and code and by engaging with stakeholders to create shared understanding about a model's assumptions, strengths and limits.

The **quality** of models is improved through regular review by the scientific community, from development to then making sure **uncertainties** in inputs and results are clearly communicated and addressed. Ongoing validation of the model's outputs in practice further adds to the trustworthiness of model-based evidence.

A continuous dialogue between **researchers and policymakers** is fundamental to understanding how models could and should be used for policy.

The questions you need to ask

There is a set of structured questions, based on those that specialists ask, that enable policymakers and the wider public to question model use for policy, and help researchers to explain evidence and keep it accessible and accountable.

First and most importantly, we should define the **policy issue at stake** and the policy questions.

Then, the following questions help to **assess** whether a certain model is the right tool to answer them, and to **interpret** results correctly.

1 What we do we know about the **model**?

About the **data**

What are the sources?

What biases or limits exist?

What is missing, and is it relevant?

What are the relationships between the data?

What are the associated uncertainties?

About the **assumptions**

Are they well-founded?

What has not been considered?

What are the sensitivities of the model?

2 Is the model **transparent**?

Are model inputs and outputs publicly available?

Is the model code accessible?

Is model development and performance documentation available?

3 What do we know about model **quality**?

Has the model been peer reviewed and discussed in the scientific community?

Have assumptions and results been discussed and validated with the expert community?

Is there a statement on uncertainties and is it explained?

Is the model being used in a new context? Does this introduce new limitations?

4 Is **communication** adequate?

Are model results presented in a clearly understandable format?

Are uncertainties clear?

Are limitations explained as well as their implications for results?