

Sensitivity and Uncertainty Analysis Report Summary

In NEXOGENESIS a sensitivity and uncertainty analysis was conducted to assess how variations in input parameters impact models' outputs and to evaluate the degree of uncertainty associated with the results. These analyses helped improve model reliability and guide decision-making processes under uncertainty.

Methodology

We used a sensitivity analysis to determine which parameters have the greatest influence on models' outcomes. Various statistical and computational methods were applied to analyse dependencies and identify key drivers of variability. The uncertainty analysis was conducted to quantify the level of confidence in model predictions by considering the effects of unknowns and potential data limitations.



Key findings

The sensitivity analysis revealed that a small set of parameters significantly influenced the model's results. These key parameters should be prioritised for accurate data collection and refinement. The uncertainty analysis indicated that while some models' outputs remained stable across scenarios, others showed considerable variability due to inherent data uncertainties, indicating that conditions could be vastly different under different development pathways. Addressing these uncertainties through improved data collection and refined modelling approaches is essential.

Implications and Recommendations

The findings suggest that focusing on high-impact parameters can enhance model accuracy. Stakeholders should invest in better data acquisition strategies to reduce uncertainty and improve decision-making, but should also be aware that planning for one future may be unsuitable under different development trajectories – policy robustness is critical. Future work should incorporate more robust sensitivity testing and scenario analysis to strengthen confidence in results.

Conclusion

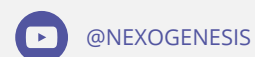
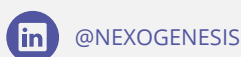
Sensitivity and uncertainty analyses are important for understanding model reliability. This allowed to highlight the importance of identifying influential parameters and addressing uncertainty sources to enhance the robustness of predictions. Continued efforts in refining data inputs and methodologies will improve future assessments and outcomes. Robust and flexible policy making, accounting for uncertain development trajectories, is key.



To learn more about our Sensitivity and Uncertainty Analysis, read our corresponding deliverable: [Here](#).

More about the project : <https://nexogenesis.eu/>

And stay tuned to learn more about the results on our social media accounts:



The NEXOGENESIS consortium

