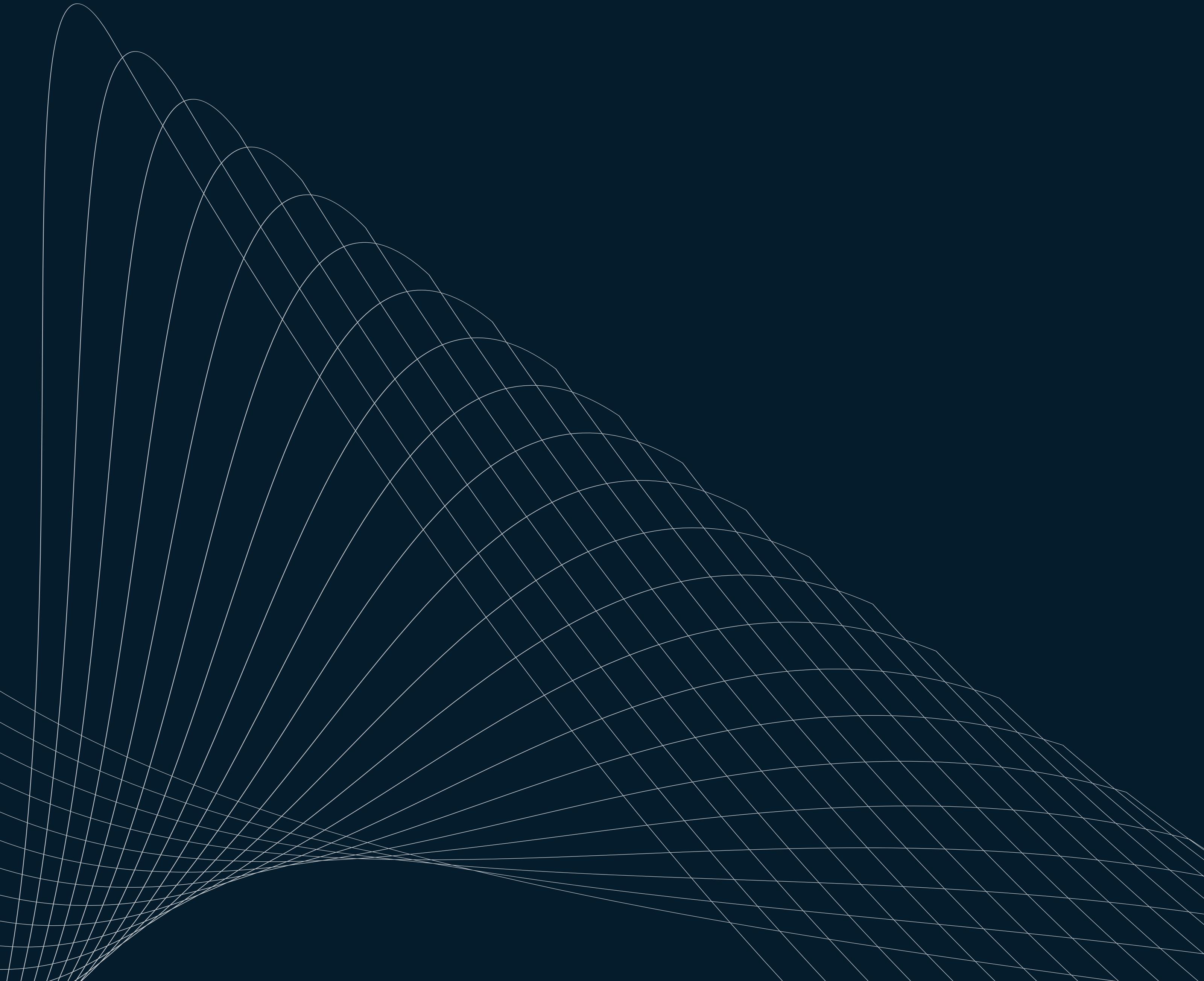


Corporate Sustainability Advisor

COGNITIVE GARAGE

Team - 23



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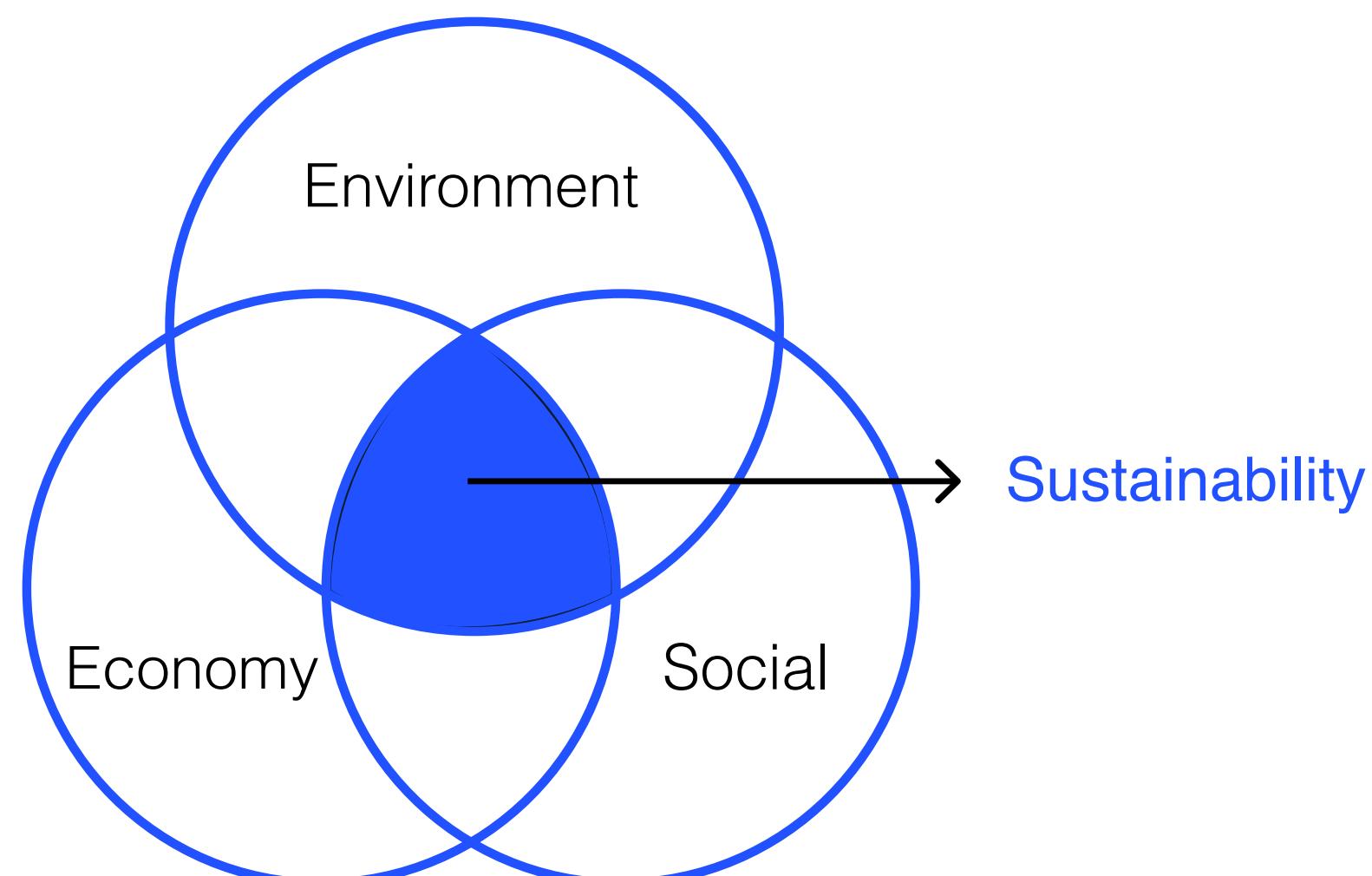
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Expert Insights

Gaining a deeper understanding of sustainable practices and investments



Kent A. Williams

Assistant Professor in Climate Change Leadership at Rowe School of Business Dalhousie University, Nova Scotia, Canada

“ Sustainability should go beyond policies and laws to reach a behavioral level. It's important to measure and understand the human cost of operations, and technology can help to quantify aspects that were previously difficult to measure. Sustainability efforts should be inclusive and address the needs of diverse populations. Companies must consider the impact of their operations on different communities and work towards creating a positive social impact.

Q. Is there any demand for a AI based (tech) solution for corporate sustainability ?

Q. How should we approach to make a decision model for corporate sustainability advisor?

Q. Can sustainable investments be used as a financial tool?



Arpita Pandey

Assistant Professor, Marketing Area, Indian
Institute of Management, Bangalore

“ It's important to validate the model through tests and simulations, and to fine-tune it based on the results. Finally, the model needs to be integrated with the company's existing systems and processes for seamless implementation. In short, the development process requires a systematic and data-driven approach, along with a thorough understanding of ESG metrics and ethical considerations.

Q. How to begin development of such a automated model?

Q. What impact can we expect from such a model?

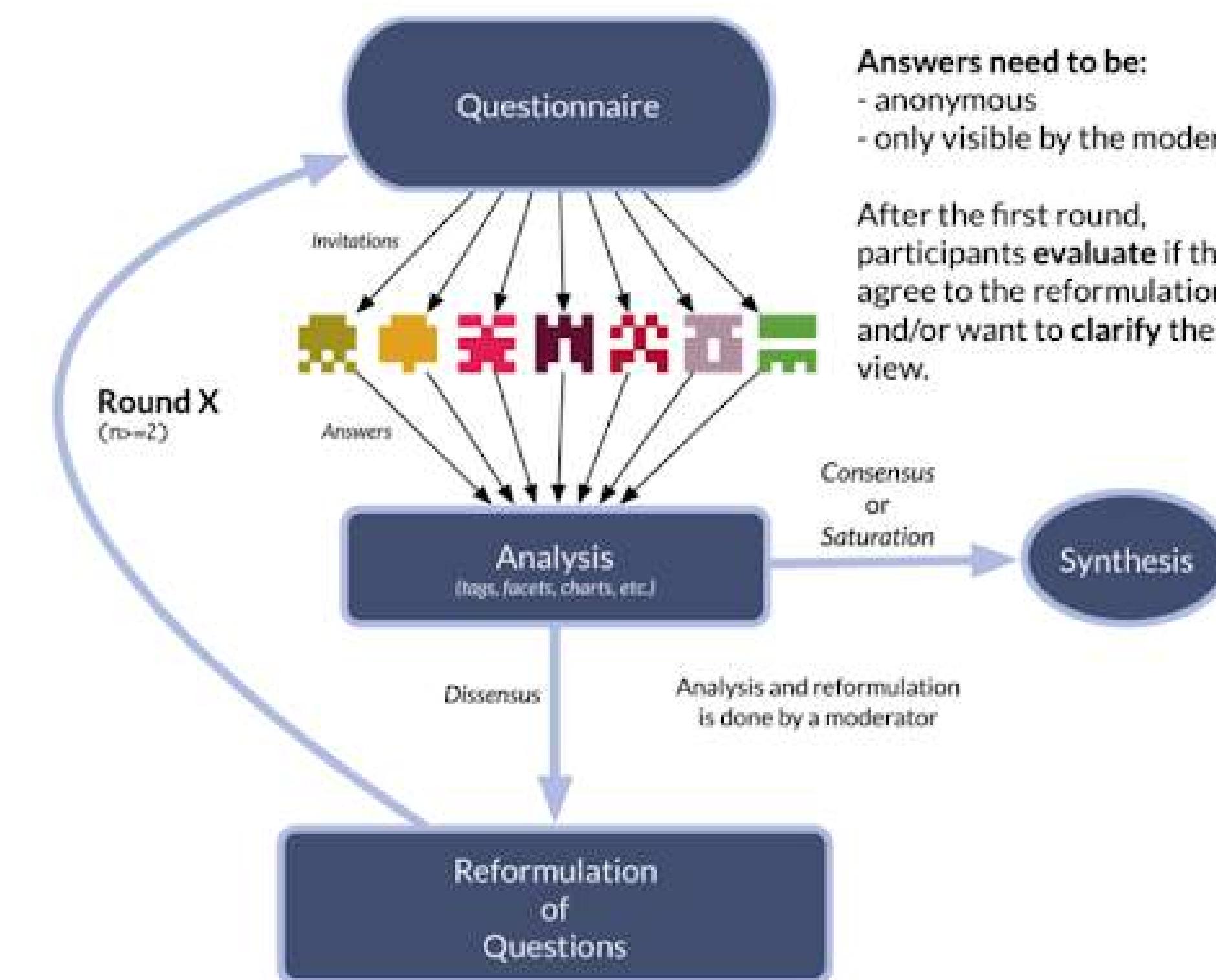
Building the Blueprint

Mapping out the input parameters and decision making

In order to effectively address the challenges posed by sustainability and its impact on businesses, it is crucial to understand the various factors that play a role in the decision-making process. This involves mapping out the various input parameters and their relationships to the decisions that need to be made.

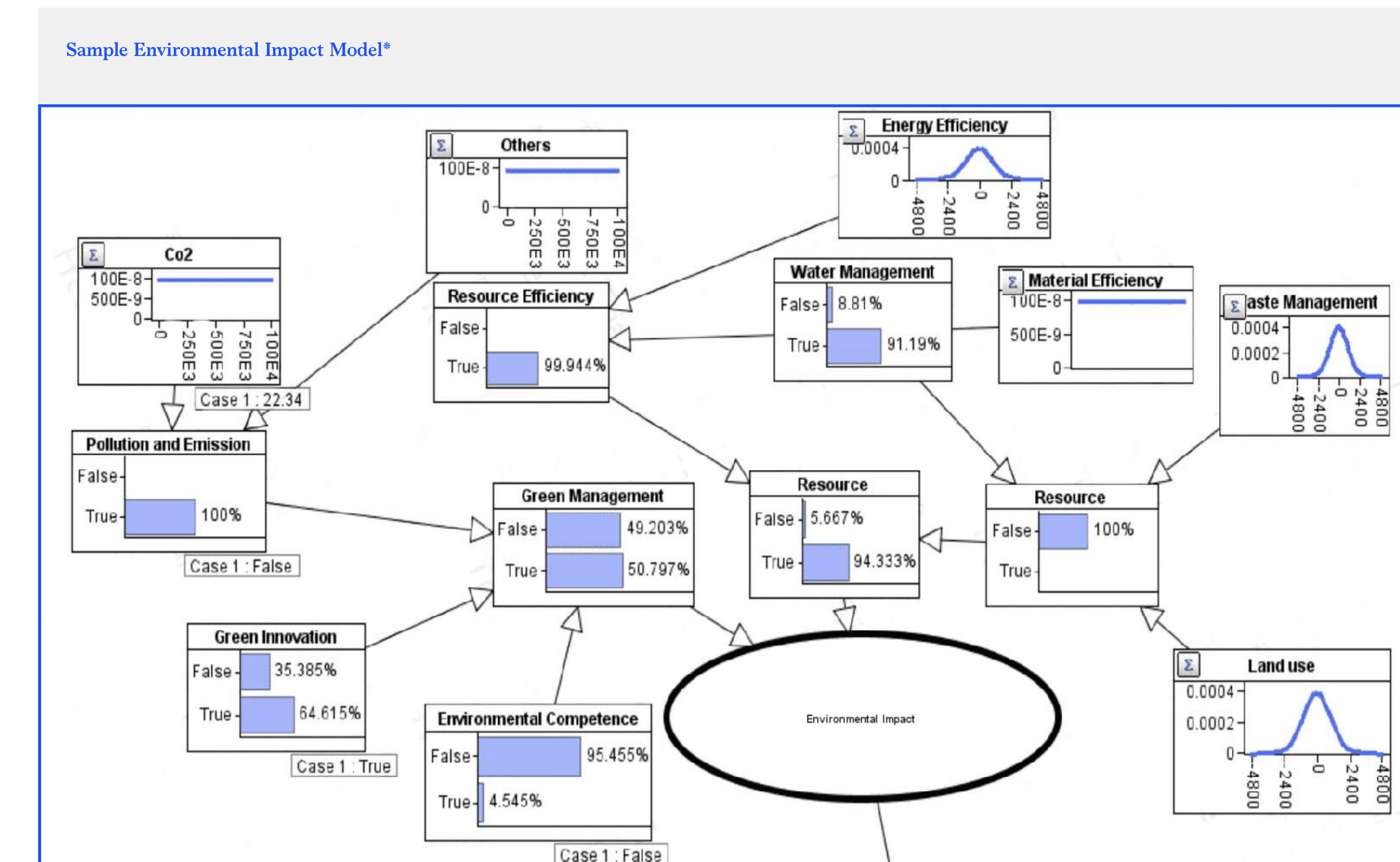
Delphi Method : A Structured approach to Consensus - Building and Forecasting

The Delphi method is a forecasting and consensus-building process used in many fields, such as business, government, and social sciences. It involves gathering a panel of experts, who anonymously provide their predictions or opinions on a specific issue through a series of rounds of questionnaires.

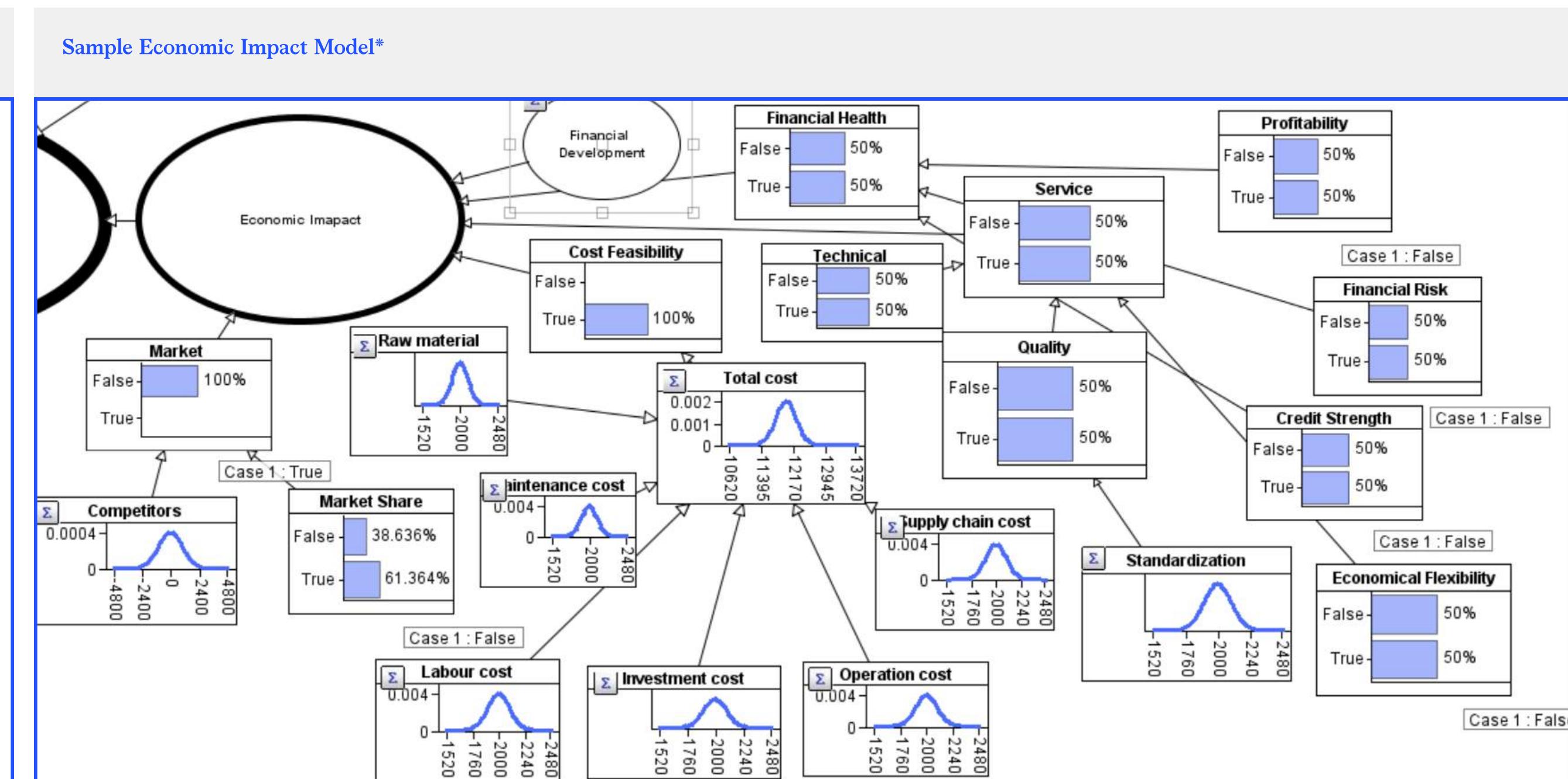
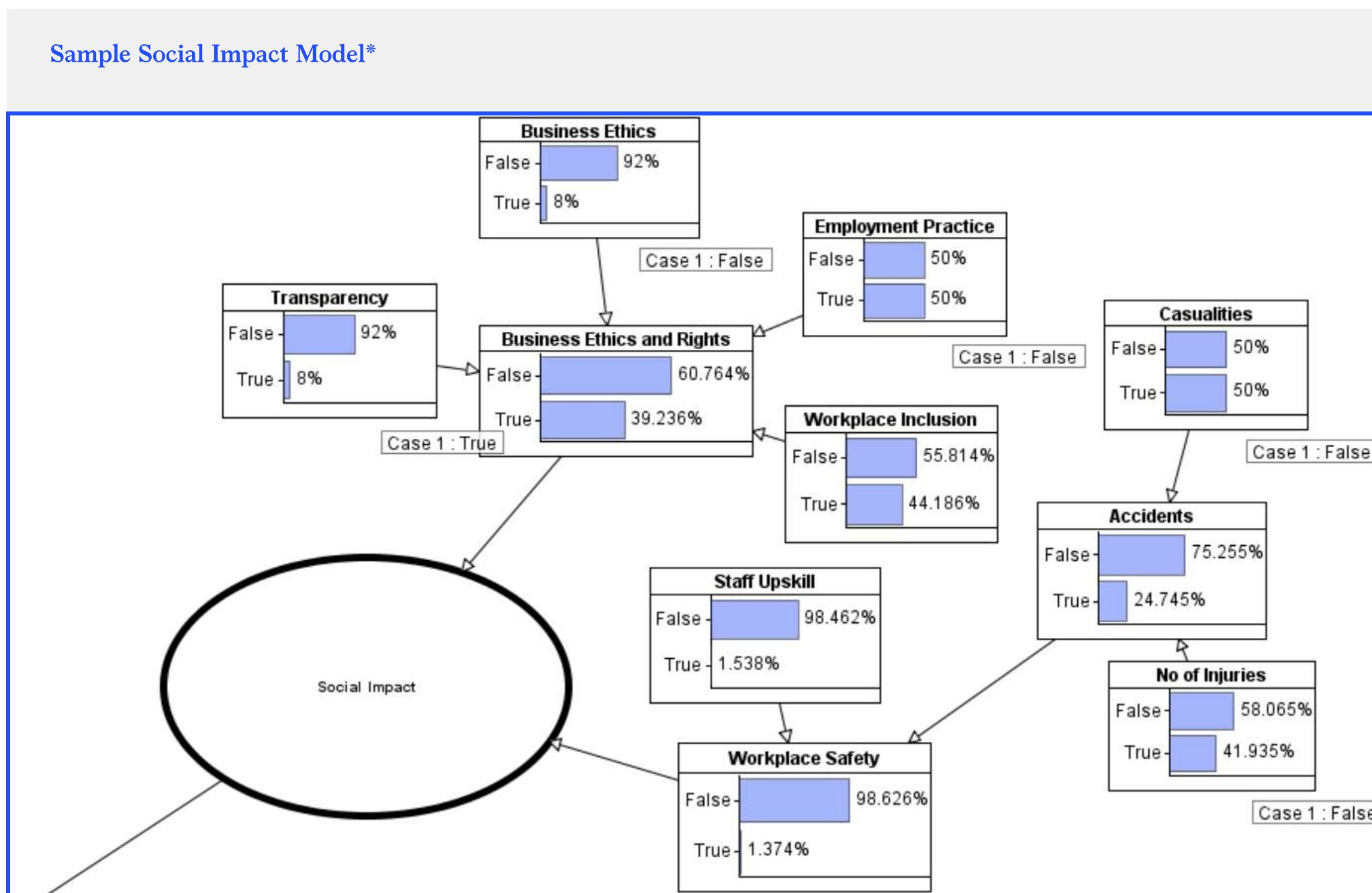


Analyzing Impact : A Multi Dimensional analysis to Sustainability

To accurately measure the impact, a multi-dimensional analysis is required that takes into account the economic, environmental, and social parameters. In terms of carbon credits, the impact on the economy can be analyzed through the financial benefits of reduced greenhouse gas emissions and the creation of new markets for carbon credits. The environmental impact can be evaluated by examining the reduction in greenhouse gas emissions, the increase in renewable energy sources, and the improvement in air and water quality. The social impact can be assessed by evaluating the impact on communities, including the creation of new jobs and the improvement of living standards. The combination of these parameters provides a comprehensive view of the impact of sustainable development and helps in determining the effectiveness of carbon credits as a financial instrument for promoting sustainability.



*This Bayesian model was made to develop a better understanding on how our parameters are related to the respective Impact.
Data are not accurate.



*This Bayesian model was made to develop a better understanding on how our parameters are related to the respective Impact.
Data are not accurate.

Math behind the model

1

Noisy OR Operator :

A noisy OR operator is a logical operator used in probabilistic graphical models, specifically Bayesian networks. It models the relationship between a set of binary variables and a single binary output variable. The noisy OR operator represents the notion that the output variable is "false" if and only if all input variables are "false." However, due to the presence of noise or uncertainty, each input variable may be "false" even if it should be "true." The noisy OR operator allows for the modeling of this uncertainty by assigning probabilities to each input being "false" given that the output is "true."

2

Labelled Nodes :

In a probabilistic graphical model, labeled nodes refer to the variables that have known or observed values. These variables are typically represented as nodes in a graph and are labeled with their actual values.

Labeled nodes play an important role in probabilistic graphical models as they provide information that can be used to make predictions about the values of other, unobserved variables in the model.

3

Propagational Analysis :

Propagation analysis is a technique used in various fields such as telecommunications, computer networking, and electrical engineering to evaluate the behavior and performance of a signal as it travels through a communication system or network. The analysis takes into account the various factors that can affect the signal such as transmission medium, signal strength, noise, and interference.

The goal of propagation analysis is to understand how a signal behaves as it moves from one location to another, how it interacts with the environment, and how it degrades over distance.

This information is crucial for designing and optimizing communication systems and networks, as it helps to identify potential problems and find solutions to improve performance.

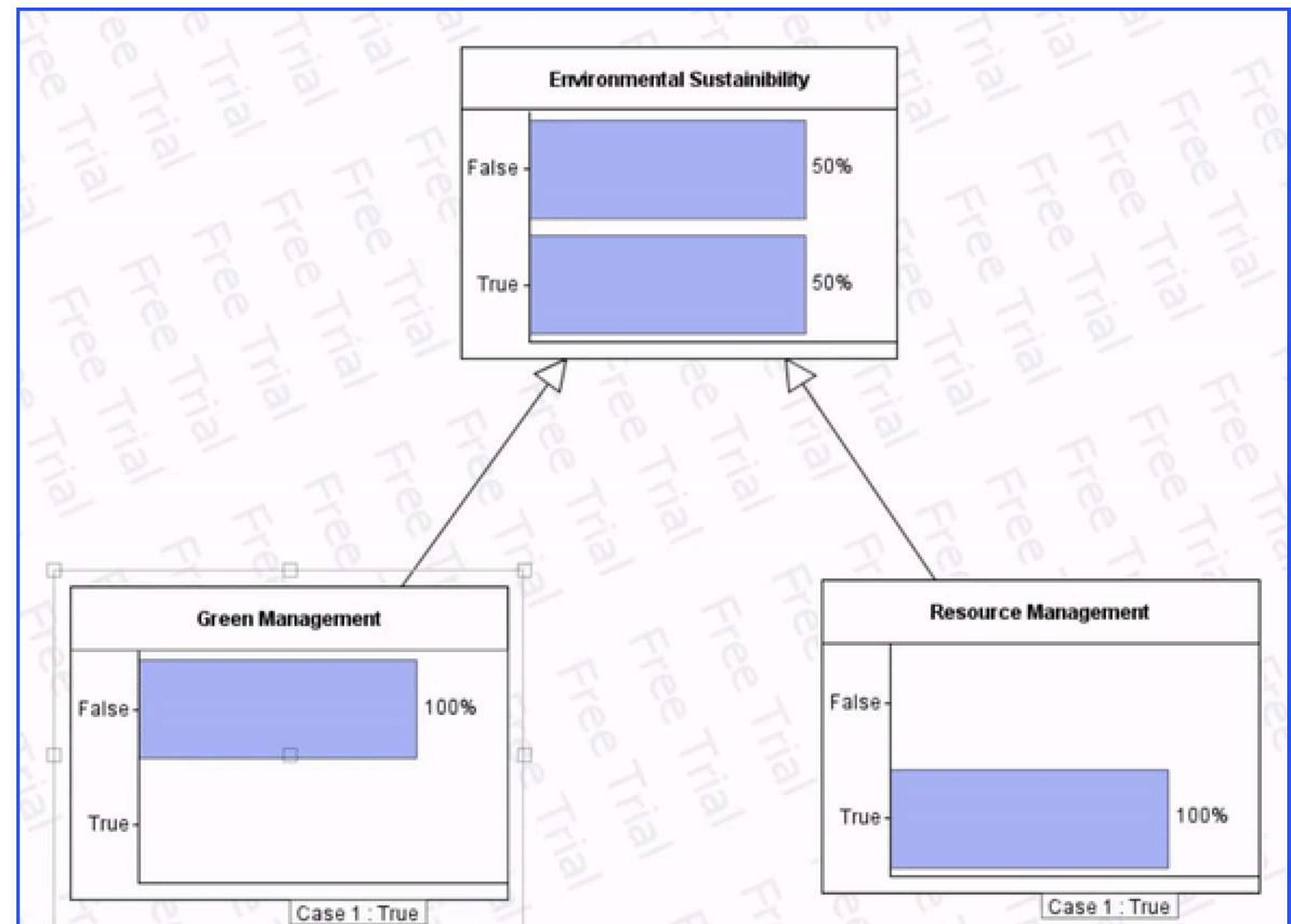
4

Sensitivity Analysis :

Sensitivity analysis is a method used to study the impact of changing one or more input variables on the output of a system, model, or simulation. It is a way to assess the robustness of a model and understand how its output changes in response to variations in the inputs.

The purpose of sensitivity analysis is to identify the key drivers or inputs that have the greatest influence on the output and to quantify their relative importance. This information can be used to make better decisions, improve the accuracy of predictions, and to optimize the performance of a system.

Sensitivity analysis can be applied to a wide range of systems and models, including financial models, simulation models, engineering designs, and natural systems. It is an important tool for decision-makers and can help to identify areas of a model that are uncertain or where further data or analysis is needed.

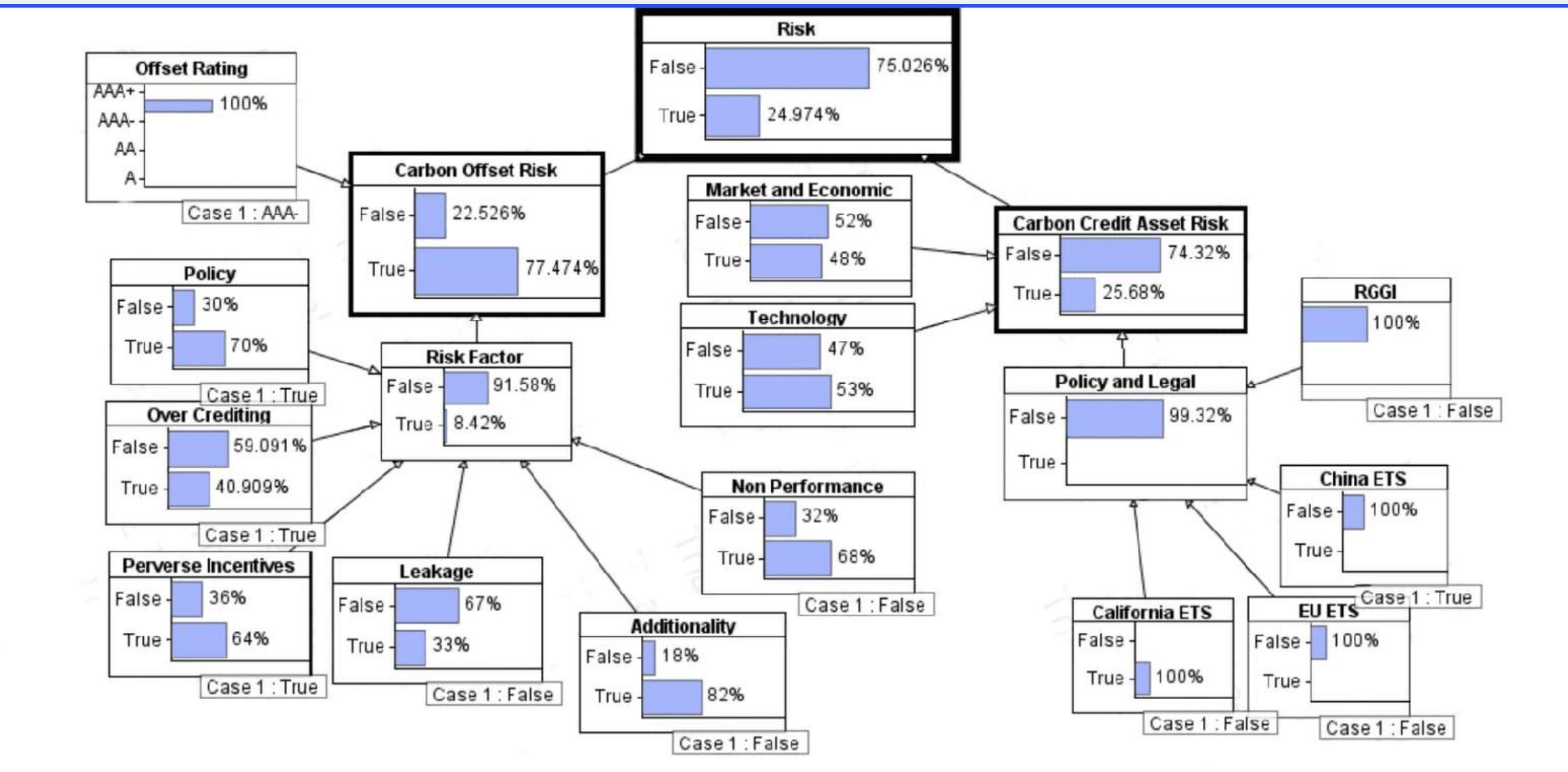


$$\text{Environmental Sustainability} = \text{NoisyOR}$$

(Green Management, 0.75, Resource Management, 0.75, 0.25)

Carbon Offset Risk

Sample Risk Model*



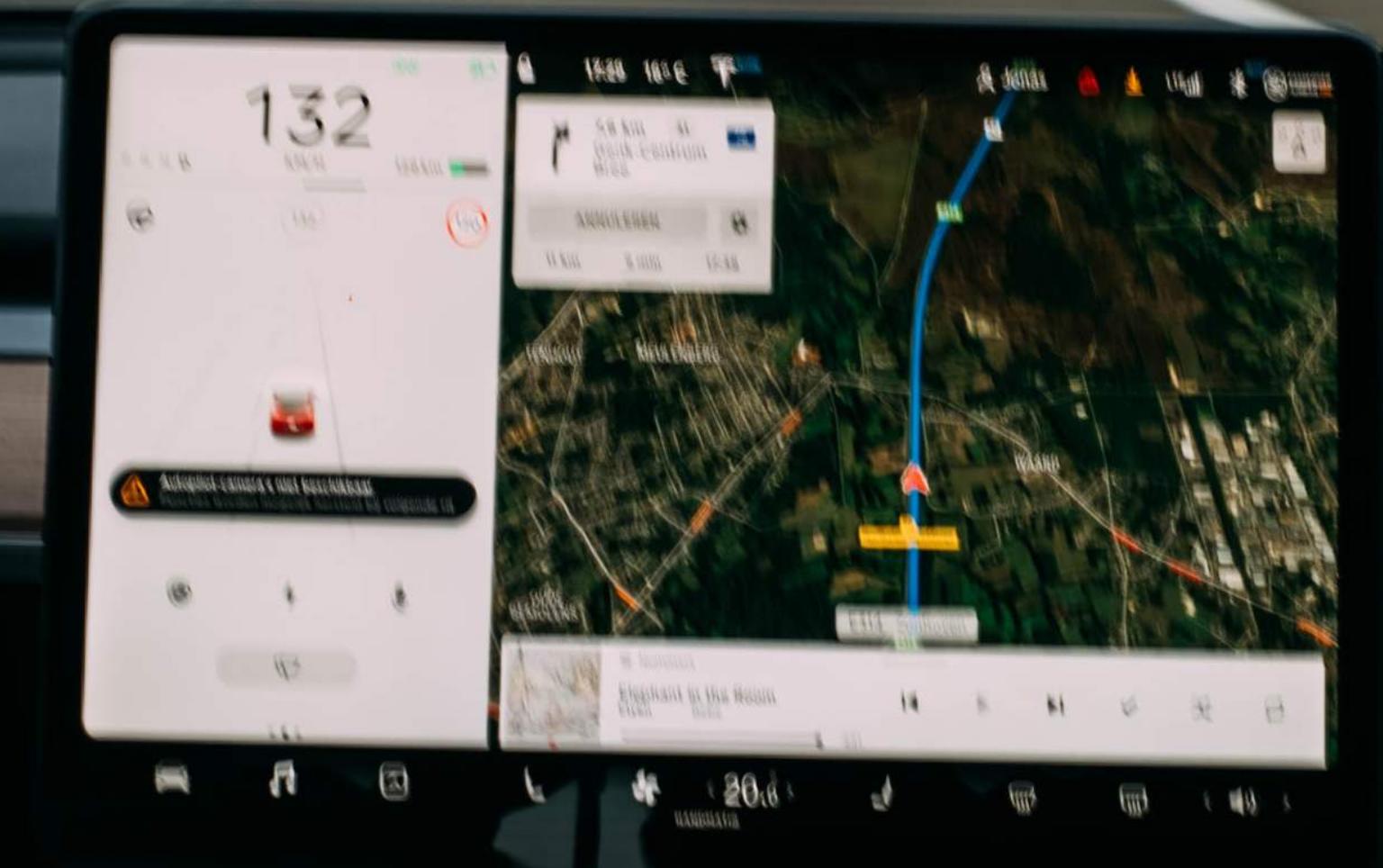
Probability of the proposed offset to capture a Tonne of Carbon reduces as we move along the line



Carbon credits and offsets are financial instruments that are used to offset greenhouse gas emissions by investing in clean energy or carbon reduction projects. These credits and offsets are created through various mechanisms such as the Clean Development Mechanism (CDM) under the United Nations Framework Convention on Climate Change (UNFCCC), or through voluntary markets. The idea behind carbon credits and offsets is that businesses and individuals can invest in these credits and offsets to balance out their own carbon emissions, effectively neutralizing their impact on the environment. When it comes to analyzing risk, there are several key factors to consider with carbon credits and offsets. Firstly, it's important to assess the quality of the carbon reduction projects being invested in, including their likelihood of achieving the emissions reductions claimed.

*This Bayesian model was made to develop a better understanding on how our parameters are related to the Risk Impact. Data are not accurate.

Carbon credits made Tesla profitable



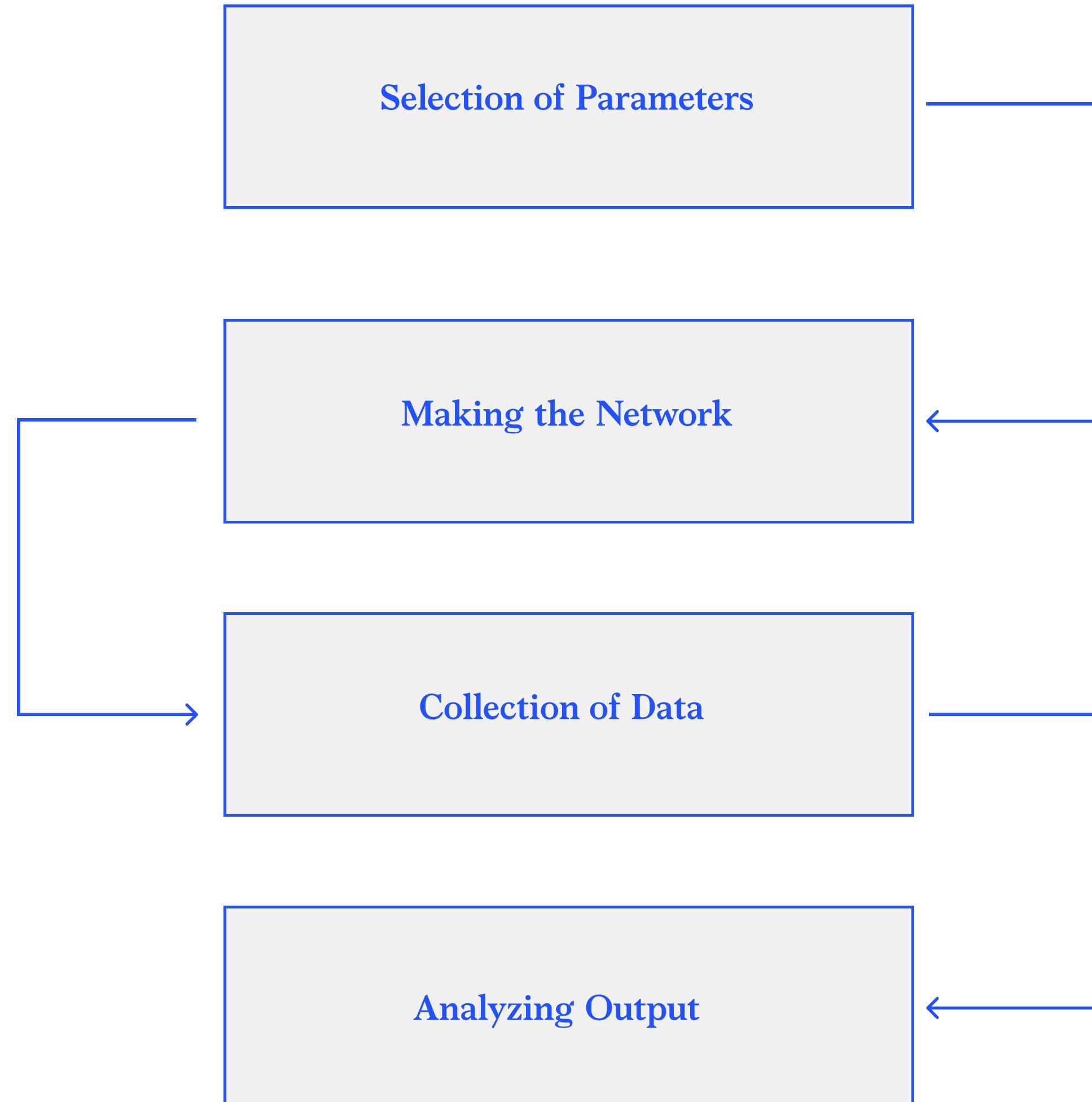
#ProcessNotJustProduct

Constructing the decision tree

Mapping out the Input parameters and decision making process

The types of decisions that our model can make include:

- 1 Assessment of sustainability practices and initiatives, and identification of areas for improvement.
- 2 Analysis of carbon credits and offset assets to determine their impact on sustainability.
- 3 Recommendations for reducing the carbon footprint of operations and mitigating the environmental impact of business activities.
- 4 Evaluation of social sustainability initiatives and assessment of their impact on the community.
- 5 Prioritization of sustainability initiatives based on their potential impact and feasibility.
- 6 Identification of opportunities for collaboration with other companies and organizations to achieve sustainability goals.

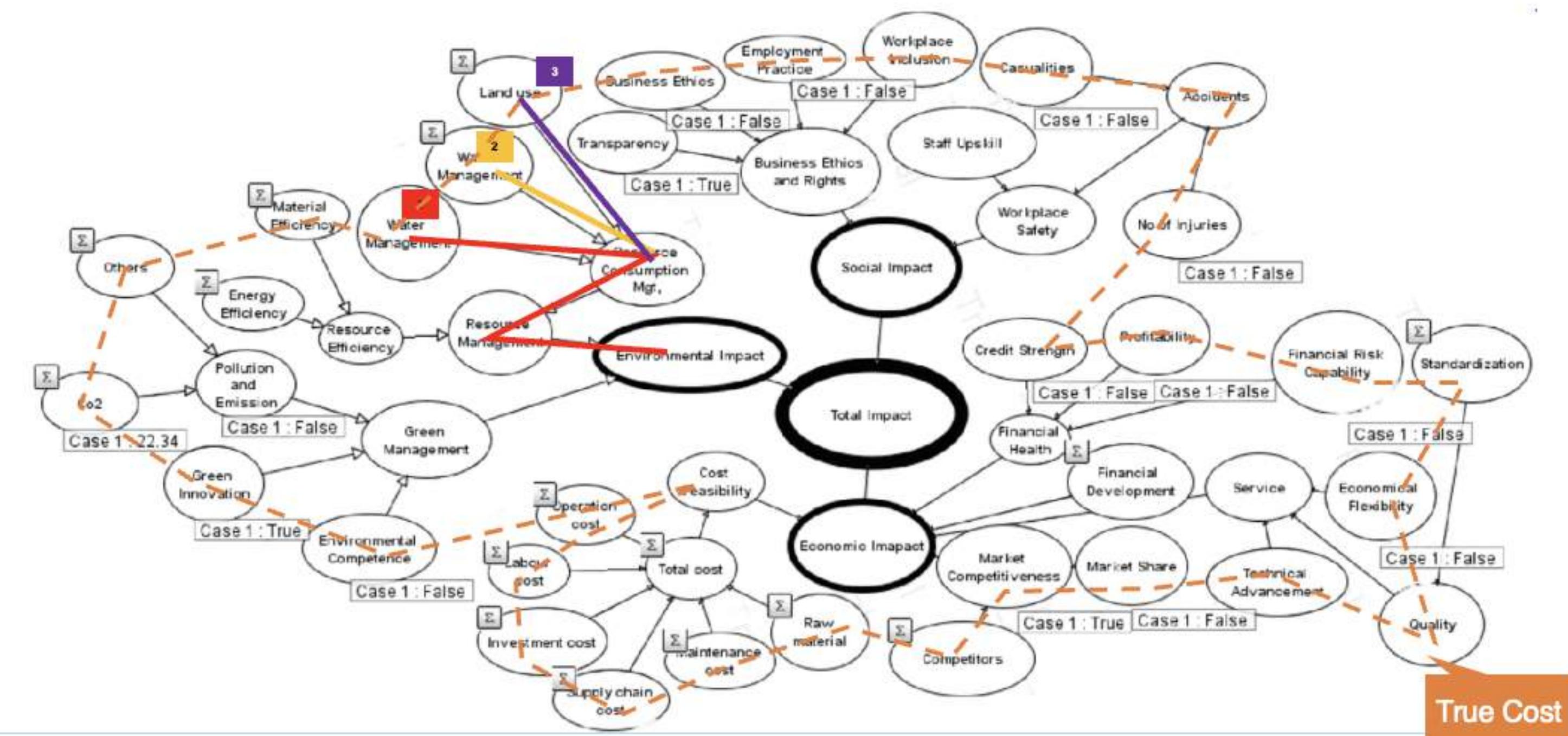


Unpacking the Influence

Examining the Impact of Input Parameters and Decision Making Process

The impact of the model is the effect that its output and decision-making process have on various stakeholders and the environment. It involves examining how the input parameters and decision-making process of the model influence the outcomes and impact of sustainable development initiatives. This can be assessed in terms of economic, environmental, and social impacts. The model can help companies and organizations make more informed and sustainable decisions that have a positive impact on all stakeholders, including employees, customers, suppliers, and the environment. The model can also help companies better understand the impact of their operations on the environment, and identify areas for improvement. Ultimately, the goal of exploring the influence of the model is to understand the full range of impacts it has and to continuously improve it to maximize its positive impact.

Correlating carbon credits and our sustainability score



Conclusion & Future recommendations

Setting the Standard: Concluding Thoughts and Recommendations for a Better Tomorrow

The impact of the model is the effect that its output and decision-making process have on various stakeholders and the environment. It involves examining how the input parameters and decision-making process of the model influence the outcomes and impact of sustainable development initiatives. This can be assessed in terms of economic, environmental, and social impacts. The model can help companies and organizations make more informed and sustainable decisions that have a positive impact on all stakeholders, including employees, customers, suppliers, and the environment. The model can also help companies better understand the impact of their operations on the environment, and identify areas for improvement. Ultimately, the goal of exploring the influence of the model is to understand the full range of impacts it has and to continuously improve it to maximize its positive impact.

Sustainability as a financial instrument, education and a way to achieve equality and inclusion.

We are open for questions.

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