Key findings

The Proof is in the Pudding – Revealing the SDGs with Artificial Intelligence

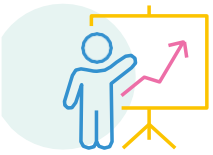
Jean-Baptiste Jacouton, Research officer, French Development Agency (AFD)
Régis Marodon, Sustainable Finance Advisor, French Development Agency (AFD)
Adeline Laulanié, Data Officer, French Development Agency (AFD)

Finance in Common

AFD Agence Française de Développement

This overview is published in the framework of the third edition of the Finance in Common Summit in Abidjan "Green and Just transition for a sustainable recovery".

A growing number of Public Development Banks (PDBs) are integrating the Sustainable Development Goals (SDGs) into their activities. However, the lack of a common methodology for SDG reporting prevents from assessing the progress made in addressing the financing gap to achieve the 2030 Agenda. The paper explores the possibility of using expert artificial intelligence (AI) methods to analyze systematically, robustly and in a unified way, PDBs activity and sustainability reports. We introduce the *SDG Prospector*, which uses a language model that is more effective than keyword approaches to detect SDGs in a text.



Objectives and research questions

Our research is at the crossroads of two contemporary questions: on the one hand, we investigate the nature and the degree with which Public Development Banks integrate the 2030 Agenda in their strategies. On the other, we explore whether artificial intelligence is a reliable tool to analyze organizations' extra-financial impacts.

Methods

The *SDG Prospector* uses an algorithm called DistilRoBERTa. This language model, developed by Facebook is available on open source and is pre-trained on millions of texts written in English, including the entirety of Wikipedia articles. To specialize the SDG Prospector in recognizing the SDGs, we have created a tailored learning base. It is composed of more than 8,500 texts from UN documents, government reports, and research articles, which reflect the full complexity of the SDGs. Thanks to this expert data, the algorithm builds an artificial "neural network", which allows it to understand precisely the context of sentences. As such, the *SDG Prospector* is more efficient and robust than traditional keywords analyses.

We apply the SDG Prospector to the activity and sustainability reports of 237 Public Development Banks over the 2016-2020 period.

Results

We draw an extensive mapping of PDBs' positioning towards the 2030 Agenda:

- PDBs' strategic and operational narrative is mainly structured around the "productive" Sustainable Development Goals such as SDG 8 "Decent Work and Economic Growth" and SDG 9 "Industry, Innovation and Infrastructure".
- SDG 13 "Climate Action" is increasingly taken into account by the entire sample, and we note a positive correlation between the size of PDBs' balance sheet and their consideration for SDGs that are associated with environmental protection.
- Biodiversity constitutes a negligible part of PDBs' narrative.
- Social SDGs account for 21% of PDBs' annual reports. However, cross-cutting SDGs such as gender equality, reduced inequalities and the eradication of poverty represent a minor share of PDBs' narrative.
- PDBs that have similar characteristics tend to share the same SDG narrative.

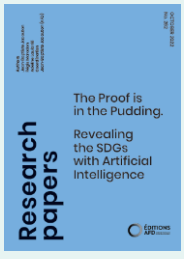
Recommendations

Aligning with specific sustainability criteria is a major challenge for the financial sector and for public and private investors: to what extent the "green" portfolios contribute to the fight against climate change and the protection of biodiversity? Are the impacts of "green" bond-backed projects mapped out on secure and comparable data? Once the investment decision has been made, which system ensures the monitoring and guarantees that the commitments are respected?

All these questions require a robust, reproducible, and as little arbitrary information processing as possible. Our research shows that an artificial intelligence tool, backed by a homogeneous and high-quality documentary source, can reveal content from massive documentation that would be difficult, otherwise impossible, to process manually with the same degree of consistency and precision.

The use of frontier technologies in the field of sustainability is likely to accompany its visibility, its rise and the quality of the information that decision makers need to promote the necessary transitions.

Finance in Common



Access the paper
The Proof is in the Pudding – Revealing the SDGs with Artificial Intelligence