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# NEWSLETTER #7 – NOVEMBRE 2022

## –AI IN DECISION-MAKING–

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**T**he application of artificial intelligence in business raises the question of managerial responsibility: to what extent are managers held responsible for the ‘automated’ decisions taken by the tools entrusted to them? **Automated decision-making** leverages algorithms based on derived profiles, as well as assumptions about how we think.

The interpretability of these ‘**black boxes**’ is a real challenge – because humans, even those who design them, cannot understand how the variables are combined to make predictions. **The value of AI** in decision-making doesn’t come from the technology itself, but from **how organizations leverage AI** to enhance the processes of managerial decision-making.

In the articles reviewed below, the authors discuss the mechanics of how AI can support managerial decision-making, the challenges of capturing the context of the decision environment, and the ethical questions that automated decision-making brings to light.

The authors point out the various potential use cases of AI assisted decision-making in business and society, the potential value that AI produces, as well as the implicit ethical and legal questions that have been raised. They argue, from a variety of angles, **that AI’s benefits will be conditioned by how organizations manage the practical issues of the implementation and supervision of such systems.**

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- [AI Ethical Decision Making: Is Society Ready? – ScienceDaily](#)

This summary reviews research at Hiroshima University addressing the question of whether society is willing to accept AI decision-making. In their multi-country study of human interaction with autonomous cars.

The researchers ran two experiments, the first designed to measure the bias people might have against AI ethical decision-making, and the second to test the effect of two alternative ways of introducing AI into society.

They find that people do not seem to show bias against AI ethical decision-making but rather an aversion to AI. The extent of this bias varies both with national culture and the degree of economic development.

- [Algorithmic Decision Making: To What Extent Can Due Process Principles Assist in Protecting Individuals from the Threat of Algocracy – Academia.edu](#)

Michael Camilleri's dissertation at the University of Edinburgh explores the degree to which traditional mechanisms of government can integrate algorithmic decision-making without violating due process principles. The author argues that the crucial question here is whether the legislature should allow the courts to tackle the 'unique' aspects of these threats or whether it is necessary to legislate.

He concludes that this dissertation highlights the threats of algocracy not to argue that the use of algorithmic decision-making systems by public bodies should be barred but acknowledges that there are ethical and legal problems that need addressing.

- [From Rule of Law to Statute Drafting: Legal Issues for Algorithms in Government Decision-Making – Academia.edu](#)

In this contribution to the Cambridge Handbook on the Law of Algorithms, Monika Zalnieriute and Lyria Bennett Moses examine how the values of the rule of law are affected by automated government decision-making systems and the legal and practical issues that the implementation and supervision of such systems may pose in practice.

The chapter sketches the means with which algorithms are used across the spectrum of government decision-making — from the drafting of legislation, to judicial decision-making.

- [AI Based Decision Making: Combining Strategies to Improve Operational Performance – Taylor & Francis Group](#)

A. Al-Surmi, M. Bashiri, and I. Koliouris provide decision-makers with a deep learning-based model that leverages artificial neural networks (ANN), to improve decision performance using marketing and IT strategy.

Towards this end, the researchers used strategic decision-making theory, which involves structural equation modeling (SEM) and the use of an artificial neural network (ANN) algorithm.

The paper details the researchers' hypotheses and conclusions. The article begins with the details of the theoretical research and then their research into existing algorithms and those they have implemented.

Much more than the provision of a new algorithm, the researchers provide a theoretical, methodological and empirical contribution to understanding AI's potential role in organizational decision-making.

- [AI isn't Ready to Make Unsupervised Decisions – Harvard Business Review](#)

In this contribution to HBR; Joe McKendrick and Andy Thurai use a myriad of examples to argue that AI in its current form misses the larger context which shapes the decision-making process and thus can't analyze its own decisions with reasoning behind it.

Although research in AI has evolved to compete with human intelligence in many areas with unmatched accuracy, quality, and speed, there is little evidence that AI will be able to capture and process the subjective experiences, feelings, and empathy that makes the world a better place to live and work.

- [What AI-Driven Decision Making Looks Like – Harvard Business Review](#)

In this HBR contribution, Eric Colson highlights the distinction between "**data-driven**" and "**AI-driven**". The author points out that despite the information gained through AI (with varying degrees of relevance in the results), humans have difficulties (cognitive biases) in processing the results.

Although he advocates the increasing use of AI in the decision-making process, he warns against the risk of misuse of biased data and the absence of humans in the loop to ensure that company values and market dynamics are taken into account.

- [Will Algorithms Blind People? The Effect of Explainable AI and Decision-makers' Experience on AI-supported Decision-making in Government – SAGE Journals](#)

In this 2022 Sage publication, Janssen, M., Hartog, M., Matheus, R., Yi Ding, A., & Kuk, G. (2022) compared the outcome of human decision-making in **3 different scenarios**.

In the 1st situation, humans **made decisions alone**. In other situations, they were helped either by **business rules** (situation 2) or by **machine learning** (situation 3).

The results of these experiments is that machine learning algorithms can improve the decision-making process on **two conditions**. On one hand, the algorithms must correctly reflect the decision-making environment.

On the other, organizations need to actively work to ensure the transparency and **accountability** of decision-making.

- [How Artificial Intelligence Will Change Decision-Making for Businesses – Medium / Becoming Human: Artificial Intelligence Magazine](#)

Artificial intelligence (AI) is already present in our daily lives through the use of voice assistants and weather forecasts.

In business, decision-making algorithms have already demonstrated their value in various marketing scenarios that produce a vast amount of data, including customer analytics, customer success and customer relationship management.

- [Causal AI — Enabling Data-Driven Decisions – Medium / Towards Data Science](#)

Despite the progress made by AI in recent years, the models are not yet capable of understanding the context necessary to interpret the results, and therefore to make decisions.

The consequences of a decision can have serious consequences. For this, it is essential to know the reason behind decision-making in order to improve each decision.

To achieve this, new approaches to automatic learning based on the use of causal reasoning are needed.

The principle of operation is as follows: **causal inference estimates the causal effect of an intervention on certain outcomes from real-world observational data**, holding all other variables constant.

- [How Artificial Intelligence Can Improve Organizational Decision Making – Forbes](#)

This contribution in Forbes analyzes recent [Deloitte](#) (2019) and [Gartner](#) (2019) studies on the benefits of AI.

According to the authors, artificial intelligence **brings 5 benefits** to an organization:

1. **Improving** their current product offer;
2. **Optimizing** internal operations;
3. **Optimizing** external operations;
4. **Freeing up** workers to be more **creative**;
5. **Helping** leaders make better decisions.

Beyond productivity, artificial intelligence has also supported the decision-making process.

According to some experts, to reach this maturity, **AI must go through 3 stages**:

1. Assisted intelligence;
2. Augmented intelligence;
3. Autonomous intelligence.

Moreover, according to a Gartner study, the use of **AI in project implementation** will **eliminate** about **80%** of manual project management tasks in the foreseeable future.

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