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A Short Commentary on a Portuguese Case Study Regarding a New Practical Maturity Model for Responsible Artificial Intelligence

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Description

Artificial Intelligence (AI) has the potential to significantly impact human life, bringing numerous benefits. However, it also poses significant risks to human rights and society. A plethora of frameworks and guidelines have been developed in recent years to help organizations deal with those risks and threats. The main objective of the present research was to understand how organizations and stakeholders involved in the development of AI, especially in the Research and Innovation (R & I) phases, in Portugal, are considering and dealing with possible ethical, legal and social issues driven from the application of AI. On a more theoretical level, it aims to assess the existing frameworks and instruments available to organizations involved in the processes of design, development and deployment of AI technologies, regarding the trustworthiness of those processes and the responsibilities of the stakeholders. Additionally, this research aims to assess the way those frameworks and instruments are suitable to the more dynamic AI developing organizations, especially small ones, startups, scaleups and research centres and to fill the identified gaps in those frameworks and instruments.

A literature review was conducted on Technology assessment, responsible research and innovation, responsible AI, RAI certification (GARP Risk Artificial Intelligence), the maturity model concept and main

applications related to AI, including in small and medium-sized enterprises and startups. The conclusion from the literature review is that there is no practical and simple approach which is suitable for all industries and functions, that allows for self-assessment and easy identification of key improvement actions and best practices.

To fill this gap, this research presents the development of an industry-wide maturity model for responsible AI, inspired by the EU guidelines (European Union) for trustworthy AI, and other principles and codes of conduct. The core component is a short self-assessment tool covering 20 requirements for trustworthy AI, from which is calculated the maturity level achieved in each requirement. A roadmap of key improvement actions and best practices that will enable the principles outlined is then generated for organizations to improve their approach to AI-related development, enabling a positive impact on their business value.

In terms of methodology, a case study design was selected, and a mixed method approach was used to collect data. An online survey with closed-ended questions and fixed responses for each question was applied to 19 respondents at different hierarchical levels in the organizations piloted. Group interviews were conducted with 5 stakeholders' organizations: Three companies of different sizes and types and two research centres, all in Portugal.



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The results demonstrate that AI practitioners that went through the maturity model for RAI presented gained a better understanding of how their developments and processes could impact the stakeholders that will use their innovations. Seventeen out of nineteen respondents said the RAI maturity report was very clear and useful. All of them confirmed their intention to start implementing some of the recommendations and to repeat the exercise in the near future.

The recent EU AI Act was also reviewed in that perspective. The present maturity model for responsible AI could be a useful tool to address some of those rules such as conformity assessment procedures and codes of conduct and governance mechanisms.

Further work with more organizations and with wider geographical coverage can bring more consistency to the results.