
CORPORATE GOVERNANCE: THE ARTIFICIAL INTELLIGENCE'S CHALLENGE — A RESEARCH PROJECT

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Abstract

Artificial intelligence (AI) is an epochal challenge. We illustrate a research project concerning a particular field of its application: its use and its impacts in the accounting and business administration field and, more specifically, on corporate governance (CG). The research we want to carry out consists of four phases. The first consists of the analysis of the literature, in order to better understand AI *per se*, to have a concise overview of its use in the business administration field and then to deepen the main results of the work on its application in CG. The second phase will try to systematize, from a theoretical point of view, the main possible uses of AI in the field of CG and, with reference to each of them, will try to outline its potential and the most significant risks. The third phase will try to test this systematization in the field, through a sample of Italian listed companies, so as to understand whether, where and how practice corresponds to theory. Finally, the phase of conclusions, after summarizing the results obtained, will attempt to offer some reflections on the possibilities of AI to improve CG: a topic of absolute importance, both for the development of research and for operators and regulators who, in various capacities and with different tasks, are involved in this area.

1. INTRODUCTION

Artificial intelligence (AI) is an epochal challenge, especially considering four aspects: the universality of its applications, the pervasiveness of its effects, the speed of its development and its ethical implications. The creation and diffusion of software capable of analysing, learning, solving problems and making decisions in a similar way to human intelligence, but with a processing speed and storage capacity of different (and even increasing) order of magnitude, certainly opens up enormous opportunities but also brings significant threats. We are convinced that AI is an unstoppable revolution, with contours and perspectives that are difficult to define but that must be guided so that it represents an asset for humanity.

Our work will focus on a particular area of application of AI: its use and its impacts in the accounting and business administration fields and, more specifically, on corporate governance (CG). The research will not only be theoretical, but we will also look for answers to the considerations offered by investigating the Italian context and, in particular, that of listed companies. This choice is based on the assumption that the latter, compared to unlisted companies (even of comparable size), normally boasts administration and control systems that are not only of greater depth, by virtue of regulatory provisions, but also more inclined to evolution, a context (we refer to that of listed companies) in which it should be more likely to find significant applications of AI in the context of CG.

The research we want to carry out consists of four phases. We will start with an analysis of the literature in order to better understand AI *per se*, have a concise overview of its use in the accounting and business administration field and then deepen the main results of the work on its application in CG. We will then try to systematize, from a purely theoretical point of view, the main possible uses of AI in the context of CG, and, with reference to each of them, we will try to outline its potential and the most significant risks. We will, therefore, try to test this systematization in the field through a sample of Italian listed companies, so as to understand whether, where and how practice corresponds to theory. Finally, in the conclusions, we will not only summarize the results obtained but will also try to offer some reflections on the possibilities of AI to improve CG, a topic of absolute importance, not only for the development of research related to CG but also for operators and regulators who, in various capacities and with different tasks, are involved.

2. LITERATURE REVIEW

The literature review will be divided into three sequential phases. The first will concern AI alone. The aim is to better understand its notion

and origin, its types and, in general, its potential and its most significant risks. We will, therefore, develop a framework that we believe is important not only to continue with the next phases but also to deal with concepts that belong to different fields of knowledge (e.g., mathematics, computer science, law, psychology and philosophy).

The second phase will concern the application of AI in the accounting and business administration fields. The aim is to offer a brief summary of the main research areas and their development trends. The basic idea is to identify, through one (or more) literature databases, the main scientific works in the accounting and business administration area that, thanks to specific search terms (e.g., “artificial intelligence” both in the title and in the keywords), deal with AI. From the first analysis, given the high number of contributions obtained through this type of query and given the aims of the work, it will be necessary to drastically limit the set of works that will be seen in more detail, for example, by weighting the relevance of the journals in which they are published, considering the number of their citations (bearing in mind, however, that this is a topic of recent development) and then analysing the abstract.

The third phase will concern the application of AI in the context of CG. The objective is to understand the degree of interest aroused by the topic, to appreciate the level of depth of the existing literature and to summarize the main conclusions reached by it. The scientific papers to be analysed will be identified, again through one (or more) of the above databases, with a search key that requires — this is the basic idea — the simultaneous presence of “artificial intelligence” and “corporate governance” in the title, in the abstract or in the keywords of the contributions. From a first analysis, given their small number, it will not be necessary to drastically limit the set of works that will be seen in more detail. We also point out the intention not to limit the query to the accounting and business administration area — also to satisfy our curiosity towards different points of view.

3. THE QUESTIONS AND THE THEORETICAL MAP

The first question we will ask ourselves refers to the main possible uses of AI in the context of CG. A first simplistic answer could refer to any human intellectual activity; it is no coincidence that one of the main fears is being replaced by AI, perhaps losing control of it to the limit of being controlled by it, in turn. We have already talked about the universality of the application of AI, but there are still technical limits (even if they appear destined, given its speed of development, to rapid and progressive degradation), economic, legal, and ethical. Supported by the analysis of the literature — we refer particularly to the results of the third phase mentioned above — we will try to identify and systematize the main applications of AI in the context of CG. Let us

already imagine some elective categories, for example, reporting, management control, internal control systems and risk management. More intriguing is the application of AI to the interpretation of the environmental context and to the definition and evaluation of strategies to even arrive at top-down decision-making activities.

The second question we will ask ourselves concerns the potential and risks of the main applications of AI in the context of CG, as identified and systematized by answering the previous question. In other words, we will try to identify the main theoretical pros and cons of each possible use. Let us imagine right now that the potentials and risks identified could have significant similarities and transversality and are capable of facilitating the achievement of an initial systematization of their key characteristics.

By systematizing the results obtained by answering the two questions above, we would like to attempt to build a sort of map of the most promising applications of AI in the field of CG (i.e., those that could most contribute to the state-of-the-art and, from a theoretical point of view, to its improvement).

4. COMPARISON WITH A SAMPLE OF ITALIAN LISTED COMPANIES

The map of the application of AI in the context of the CG referred to in the previous point is not intended to be a mere theoretical exercise. Our goal is to test it in the field, albeit limited to the Italian context (in the future, we would like to extend the verification, thanks to the collaboration with other colleagues, to other countries to obtain more general results and evaluate the differences). Therefore, we will seek a comparison with a sample of listed companies with the idea, as already mentioned, that these are Italian companies, where it should be more likely to find significant applications of AI in the context of CG.

A questionnaire will be defined and aimed at acquiring three types of information: the degree of interest and involvement of the company with respect to AI, the main applications of AI within the framework of its CG and the main pros and cons found. Before administering it to the entire sample, we will try to improve the questionnaire in question through comparison with a small set of subjects operating in the CG of Italian listed companies.

The responses received from the listed companies in the sample will be processed to understand whether, where and how AI is really applied within their CG. It will be interesting to verify the existence of any recurrences, both in their uses and in their pros and cons, also for the purpose of developing a sort of map of the real main applications of AI in the context of CG — an actual map to be compared with the theoretical one developed previously, so as to evaluate and try to justify the differences found.

Another interesting aspect will be to try to identify some of the factors that can affect the adoption of AI in the context of the CG, for example, the sector of activity, business performance, the characteristics of the management or of the corporate control structure and national or international screening.

5. CONCLUSION

The research we have outlined has, in a nutshell, three main objectives. The first is to identify — also on the basis of the analysis of the literature — a map of the most promising applications of AI in the field of CG. The second is to understand, limited to the Italian case, those that can actually be found in the context of listed companies. The third refers to an attempt to offer reflections on the possibilities of AI to improve CG.

Ambitious goals must be confronted with risks and limitations. We mention just a few here: the complexity; multidisciplinary and speed of evolution of the AI topic, which leads us to ask for the collaboration of other researchers; the issues related to the definition of the sample of listed companies (in terms, for example, both of its size and of the way in which its elements are chosen) and the number and quality of responses to the questionnaire administered.

What are the effects of research? To contribute to a strand of study on CG, the one related to the applications of AI, recently and (we believe) promising development and to offer useful guidance to companies and their advisors to face a challenge, that of AI, which also concerns the field of CG. Such guidance could also be of interest to regulators in guiding the application of AI within CG.

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